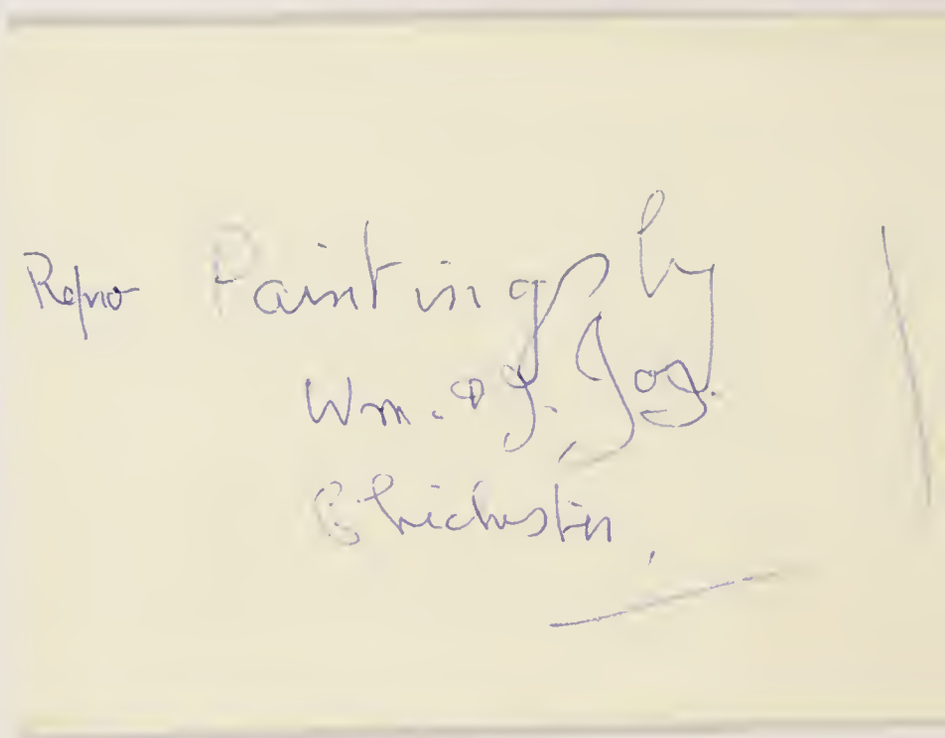
Wednesday

Mrs J. F. C. Fuller.

Overstrand Mansions,
Battersea Park, S.W.


Repro
Painting by
Wm. of Y. Jos.
Chichester.

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A. W. Fuller
8 April 1938

[illegible]

With 5 plates by Geo. & J. Smith
the brother artists of Chichester.

POST CARD.

THE ADDRESS TO BE WRITTEN ON THIS SIDE.

Francis Steer Esq.
63, Orchard Street.
Chichester.
Sussex.

50, Kingsmead Rd
London S.W.2

Notes from Victoria & Albert catalogue of water colours.

Joy. William & John Cantiloe, born Yarmouth 1803-1806 — known as The Brothers Joy. The drawings attributed to them were usually their joint production. About 1832 removed to Portsmouth & were employed by the Govt: to draw the various craft used by fishermen. The Brothers subsequently lived in Chichester. Exhibited from 1823 — 1845. John died in London 1866 William at Chichester. 1867.

For your interest, no answer required.

E. Fuller.

AN ADDRESS

TO

THE BRITISH PUBLIC;

WITH SUGGESTIONS FOR THE

RECOVERING PROPERTY FROM SUNKEN VESSELS;

ALSO, FOR THE MEANS FOR

RESCUING THE LIVES OF SAILORS

FROM STRANDED VESSELS;

AND FOR THE PREVENTION OF SHIPWRECK:

LIKEWISE, ON THE

EXTINCTION AND PREVENTION OF DESTRUCTIVE FIRES;

AND FOR

RESCUING PERSONS FROM HOUSES ENVELOPED IN FLAMES:

And for Saving from Drowning Persons who break through the Ice.

WITH A DESCRIPTION AND REPRESENTATION OF APPARATUS USED FOR THOSE PURPOSES,

AND INSTRUCTIONS FOR THEIR APPLICATION.

By G. W. MANBY, F.R.S.,

CAPTAIN, BARRACK-MASTER OF GREAT YARMOUTH;
President of the British Section of the Société Générale des Naufrages, established in Paris for the Interest of all Nations.

LONDON:

PUBLISHED BY JOHN GATHERCOLE,

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PRINTED BY J. GATHERCOLE,
AT THE POLYTECHNIC INSTITUTION, 309, REGENT-STREET.

A SHIP STRANDED on A LEE SHORE

Printed by A Friedel, at the Polytechnic Institution, 309, Regent Street, London

TO

HER MAJESTY

VICTORIA,

QUEEN OF THE BRITISH ISLES,

THE FOLLOWING WORK,

THE RESULT OF THE LABOURS OF A LONG LIFE,

SPENT IN DEVISING, AND BRINGING INTO EXECUTION,

THE MOST EFFECTIVE MODES FOR THE

PRESERVATION OF THE LIVES OF

HER MAJESTY'S SUBJECTS,

FROM VARIOUS PERILS BY LAND AND BY SEA;

LABOURS, FIRST CHEERED BY THE ENCOURAGING SMILES OF

HER ROYAL FATHER,

AND,

BY THE BLESSING OF GOD,

CROWNED WITH UNPARALLELED SUCCESS;

IS MOST HUMBLY DEDICATED,

BY GRACIOUS PERMISSION,

TO HER MAJESTY,

BY HER FAITHFUL SUBJECT AND SERVANT,

THE AUTHOR.

AN ADDRESS,

ETC. ETC.

HAVING, on many former occasions, entered at large on the means of preserving life at sea, and from fire, and from the breaking through the ice, it cannot be now necessary to revert to that part of one of the chief pursuits of my existence—the saving of lives from shipwreck; but as we are all deeply interested in every thing that relates to man and man's affairs—in few words, his LIFE and PROPERTY—I wish, in this brief Address, after having contributed so much in the cause of human life, to point out to what extent my attention has been directed to the second great branch of my subject—that of saving sunken property from irredeemable loss.

The saving of human life, especially as just adverted to, is naturally attended by its corollary, the RECOVERY OF SUNKEN PROPERTY; and the advantage and importance of this can never be questioned, when we consider the vast amount of wealth embarked in our mercantile marine, the loss to individuals and to the country when it lies buried in the ocean, and the impediments to navigation from vessels and craft being sunk in the channels of navigable rivers, and on the accessible parts of our coasts.

The means available, so far as known, for the recovery of sunken property, and the weighing or raising sunken vessels, are the Diving-bell and Poising-tackle, or Apparatus. The diving-bell is still imperfect, as every thing human must be; but a day will come when human ingenuity may give it that finish and perfection that may be required for all our purposes: for consider the ever-active, never-dormant energies of man—from the first day of his creation there was implanted in him a desire to penetrate into the mysteries of every physical object around him: he seeks, he analyzes, he investigates, he alters, and modifies, till he adds to the stock of useful contrivances; and this power of research, of combination and discovery, we term the INVENTIVE FACULTY. To this there is no limit, and it will only cease when man himself ceases.

Impressed with these feelings, I am gratified with whatever can further the cause of science, and observe with the greatest pleasure the announcement of a *Polytechnic Institution,* for the advancement of Arts and Practical Science, in Cavendish-square and Regent-street, similar to the *Ecole Centrale des Arts et Manufactures,* in Paris. It has a Laboratory, Experimental Rooms, and a Gallery for the Exhibition of novel and useful Inventions, and forms a convenient place of social resort for the lovers of Practical Science, and the admirers of Ingenious Productions; and I have myself seen there a spacious well of water, to admit the descent and illustrate the rise of the diving-bell, with which experiments may be made, where improvements may be suggested, and be practically applied, and the invaluable faculties I have alluded to may find full scope for the most unbounded exercise.

Professing myself the ingenious man's friend, and the ardent well-wisher of all who devote themselves to inventive pursuits, my anxious hope is, that this Institution may take root and flourish; because I see the advantages that will accrue from the arrangements to aid the great cause of science; because, from the high character and distinguished attainments of the members who compose its management, they are above the low feelings of party prejudice, and desire to give encouragement to every useful production; and because it will become a place of ready access, where the ingenious may submit their suggestions in the strictest confidence without injury to themselves, and where, if their productions are found *really useful and meritorious,* they will obtain the benefit of advice,* and receive the

* The advantage of advice from men of highly honourable minds, and qualified by superior scientific attainments, would greatly tend to remove the specious fallacies which so often mislead and induce persons to embark in an expensive and uncertain patent, where they sink their little capital, and waste their valuable time, which a proper degree of scientific information would have prevented, and which would have directed their efforts to objects amply to reward their industry, as well as to register their names as benefactors to mankind, and be an honour to the age in which they lived. There is one other suggestion which I beg leave to submit, and which I humbly hope is worthy of serious consideration, the establishment of a Board, consisting of members, distinguished as just named, selected to examine and to report on works tending to importantly useful and highly-beneficial objects (where the authors are from their station in life unable to perfect their designs), and if by them favourably viewed, to be recommended for some national assistance to carry their object into execution. I am aware it would be necessary in such cases to provide, that the time of such Board should not be wastefully taken up in frivolous or absurd projects, but I have no doubt arrangements might be made to guard against, and sufficiently to prevent, such a result.

cheering and fostering encouragement which the establishment will be able to afford. Thus will exertion be stimulated to subjects of practical utility, and thus will the art of descending under water to considerable depths, and of remaining there some time, be systematically advanced for the purpose of collecting valuable articles; a consideration especially important to diminish the great dangers to which those employed in the pearl fishery are at present exposed, and benefitting those engaged in obtaining other productions from the bottom of the sea; services to render the Institution an Era in the Reign of Queen Victoria, worthy of her Majesty's Patronage, and meriting the approbation of all who interest themselves in the furtherance of ingenuity, the production of inventions (especially for benevolent purposes), and the illimitable expansion of science in every branch of human industry.

In continuation of the more immediate object of this Address—the Raising of Sunken Property—there should be, jointly with the diving-bell, an apparatus or a tackling for grasping the sunken body, and for heaving it out of the element to which it has fallen a sacrifice. An apparatus for this purpose I contemplated upwards of twenty-five years since, and I have some of the models still by me, and which, I think, would effect the object designed.

The melancholy catastrophe that befel the *Royal George* is still fresh in the memories of some of us. She was a vessel of the first class, and had on board about 1,200 human beings at the time of the accident. It is not my present purpose to dwell on this frightful occurrence, I mention it to show what I reported (and is printed by order of the House of Commons on the 7th of December 1813) respecting her. It was suggested to me that much national good would result if she could be removed, being sunk in the best anchorage off Spithead, and my opinion was requested on its practicability. An accurate survey was made, and my report of it transmitted to the Commander-in-Chief, Sir Richard Bickerton, whom I requested to communicate the same to the Lords Commissioners of the Admiralty in these words :—

"On my return from selecting places at the back of the Isle of Wight, for establishing the system to save shipwrecked persons, in obedience to, and by a vote of the House of Commons, I was particularly urged to visit the spot where the *Royal George* was sunk, at

Spithead, to ascertain the practicability of her removal, from the dangers and injuries represented it gave to the roadstead. This I have been enabled to do, from the extreme stilliness of the weather, with the greatest accuracy; and to discover the difficulties that would attend such an undertaking. A considerable bank of soil I found sloping from her sides, and nearly one-third of her original height embedded in it, which, with the accumulated weight she is loaded with, may fairly be estimated at many times greater than her original weight. The length of time this ship has lain in the water, all the floating properties of the wood must consequently, be much decayed; a confirmation of which I have seen by a piece broken from her. These considerations have induced me to be of opinion, that her being bodily raised or removed is utterly impossible, as no part can be sufficiently strong to bear the purchases that necessarily would be required; her upper works might be separated by a powerful mechanical application; but it appears to me, that would only tend to increase the evils of her present situation. The only method to effect a dislodgment would be by a powerful concussion of gunpowder, which would be desirable, if extreme fine weather succeeded the explosion, to fish up the separated parts with tongs, &c., but if rough weather occurred, those separated parts might be liable to be driven about the anchorage, and thereby multiply the injuries to the roadstead of Spithead."

My object in the above letter was to prevent speculative adventurers from robbing the credulous by their fraudulent and specious misrepresentations, which my opinion materialy tended to effect, and caused the artful authors to decamp with their ill-gotten wealth.

A few years since, Messrs. Deane and Bell visited Yarmouth to recover the property in the *Guernsey Lilly* Ordnance transport, that was sunk in the roads in the year 1799, in eleven fathom water. I deeply interested myself in their success, and was a daily attendant whenever they were at work, with their air-tight helmet and dress that was impervious to water. This was the first time I ever witnessed that process; and my conviction was, and still is, that it was a most important auxiliary to the diving-bell, and in some cases, its superior, from its great simplicity, its facility of application and employment where the labour of one person at a time was required. At that period they used to descend by a ROPE LADDER, a method I saw at once to be dangerous from its

liability to entanglement and twisting by the influence of the tide, so as to render it difficult to ascend, as well as descend; on which I submitted the plan of LADDERS, introduced by me, for saving persons who break through the ice, being ELONGATED by the ends fitting into one another, with a powerful preponderating weight at the bottom, and suited to the required depth. These have since been adopted by those celebrated divers, and are found greatly to diminish the danger attendant on their avocation.

Here, then, we have the first steps, or primary elements, to set about our operation. Yet it is obvious that, whether we employ the diving-bell, or the air-tight helmet, this is only the means of applying the main power to the immersed body; and if this main power be sufficient, which it is, the raising of even the largest vessel is no longer a question of dynamics, but one merely of magnitude and cost in the adaptation of our leverage or traction.

I pass over the national case of the noble ship of war at Spithead, and the recent demersion of the *Apollo* steamer in the Thames—(to the opprobrium of science, the latter remains still embedded in the soil)—which might easily have been weighed, had requisite means been early employed, and great danger to navigation avoided.

Let us now look at the amount of property lost—we may say, lost for ever—to the public. A Report of a Select Committee of the House of Commons states it "*as amounting to nearly*"—a person not accustomed to such things would hardly credit it—but "*amounting to nearly* THREE MILLIONS *sterling per annum; the value of which, though covered by insurance to certain parties, is not the less absolutely lost to the* NATION;" and there is still more, for "*such amount does not embrace the whole extent of loss occasioned by shipwrecks, as there are many vessels lost, of which no entry is made, and no record kept.*"

Such being the amount of property, the question arises, is it worth the cost of rendering it once more available to society? Or is it to be allowed to remain heedlessly consigned to the fluid element and abandoned to a gradual decomposition? I have asserted, from well-authenticated facts, that a bale of cotton well packed will remain under water for three weeks, a bale of silk for ten days, and a sack of flour for, at least, two months, without suffering any material injury; and as an extreme case, there was brought up from the *Guernsey Lilly*,

and which I have in my possession, a bottle of wine, that had lain sunk for nearly thirty years ; and I have drunk some brought up from the same vessel as fine as ever was tasted. I am convinced that it is possible, after the first outlay in the purchase of apparatus, to raise every sunken vessel, and to free the channel of every navigable stream, so as to realise an immense profit to shareholders who embark property for the weighing of wrecks and the recovering the cargoes and hulls of stranded vessels. As an individual could not undergo the expense of providing the requisite materials for such an enterprise, I proposed, in 1836, the formation of a Joint Stock Company to carry into effect this great national undertaking. I drew up a Bill founded on this basis, for the establishment of a Wreck Weighing Association, or Marine Board, or by whatever name might be found most expressive of my object, embodying all the points necessary for giving Legislative permanency and security to the parties who should embark their money as shareholders in the Company.

I will here just give the heads of my Prospectus and Bill. Under the law as it at present operates, all stranded ships and goods fall into the hands of the agent of the Deputy Vice-admiral of the county, in consequence of the abolition of the Local Admiralty Courts, whose charges cannot be disputed before delivering up the goods, and against which there is no appeal. I proposed applying for an Act for vesting in the intended Association, or Company, all necessary powers to enable them to form a Board, or Court, with authority to award a per centage on all property saved by their means from wrecks, and authorising them to take possession of all stranded ships and goods, which would thereby be under the direction and care of a RESPONSIBLE and well-known public body. They were to be provided with steam-vessels of sufficient power and proper construction, fitted with every necessary apparatus for the most expeditious recovery of sunken property; with proper tenders of sufficient burden, constructed for such especial service, and with sets of diving apparatus of the most improved plan, with experienced divers, and implements for fishing up cargoes, and for weighing wrecked vessels. It is not necessary to particularise the other sections of the Bill. It contained all the provisions for effecting the object of the Association, and are detailed in the draft which I drew up about two years since.

I think I need not reiterate the importance of an undertaking like this, either to individuals or to the country. Should a vessel freighted with a rich cargo, or a ship of war of great cost to the nation, or a

craft of any kind, be submerged, there is at hand an Association provided with the means of instant relief. The vessel is weighed, the cargo saved, the channel cleared, a great national benefit secured, and a remunerating per centage, as is but just, guaranteed to the spirited and enterprising men who come forward for the performance of services so advantageous to the community.

The great degree of interest excited by the models, and explanatory representations of prints and drawings, to illustrate the method employed for the rescue of life and the prevention of shipwreck, deposited in the Museum of the *Polytechnic Institution*, having caused many applications for a full description of their several uses, with a view to extend such information, I readily and gladly yield to such application, for the wider promulgation of my plans, through the medium of that admirable Institution, considering it the Public British School of useful and Scientific Instruction in all departments; I not only comply in reference to the modes, as by models shown, for the preservation of life from the dangers of the SEA—from FIRE—and of those who break through the ICE,—but also with a view of presenting my inventions for those objects to the public, for the adoption of those who wish to employ them. I shall also give a detailed statement of the circumstances which led to those pursuits, with a faithful and fearless exposition of the opposition (I may say injustice) that I have experienced, and firmly combated, in support of my claims; and I will never cease endeavouring to procure justice, as well to prevent the like to others who may hereafter toil in vain, and be defeated from circumstances as unfair as they are discreditable; trusting that the public voice, at least, that part of society who are real friends to the advancement of Science, or belong to distinguished institutions, will, by their influential stations in life, discourage party prejudice—reform abuses wherever they are found to exist—obtain redress for those less persevering than myself—and see that the benevolent intentions of philanthropic testators, either to charitable purposes, or for the encouragement of useful inventions to benefit mankind, are not subverted, but faithfully and scrupulously administered to the very letter of the bequest, and stamp by their decision and advocacy the right of claimants, either to reward, or to authorship, in favour of those who are justly entitled to them for any useful discovery.

I have spoken incidentally of party spirit, having endured it repeatedly in its most vexatious form, and consequently felt the pernicious and blighting influence of this great evil; it is therefore a duty to offer a few observations, resulting from reflection and from bitter experience of its baneful effects. For, cast an eye around, and we see institutions, founded for the noblest purposes, rise and flourish for a time—then, perhaps, suddenly or prematurely sink to nothing: yet the entire surface is fair—seemingly beautiful—but there is a secret process of decay at work, and men wonder that so plausible an exterior should contain beneath it the elements of its own ruin: but the eye of observation penetrates the cause of declension—it goes to the root of the mischief, and soon discovers that cause to be—PARTY SPIRIT.

This is no imaginary picture, which my further statements will confirm; and as I am drawing fast to the natural termination of my existence, from my reaching very shortly my 74th year, and after having received medals of approbation from no less than four foreign Sovereigns for saving the lives of a few of their subjects, I consign the subject to the public, in the earnest hope they will remedy the evil, encourage useful labours, and repel improper influence.

Having touched upon the rights of authorship, I have been actuated by a desire not only to establish my claim as author to the Plan for the Preservation of Shipwrecked Mariners and the Prevention of Shipwreck, but from more than a common feeling, especially in saving the lives of BRITISH SAILORS, from that plan having originated in Norfolk, the county of my birth, and in the same district (West Norfolk) in which our IMMORTAL NELSON first drew his breath. In my early life his exploits were the objects of my admiration, and excited in me an anxiety to follow his career. But that was not my fate (from the education I fortunately received at the Royal Military Academy, at Woolwich, for the profession of a Soldier) to imitate that GREAT MAN in the deeds which won him FAME and RANK; I was not less desirous to walk in a path in some way associated with his own, by discoveries calculated to preserve the lives of that class of men by whose prowess, under that heroic chief, the country was preserved; and though my repeated applications to obtain some mark of my SOVEREIGN'S favour has not been successful—a circumstance I cannot

sufficiently regret, because it will discourage others, from employing their time in endeavours to serve the country, and for benefitting mankind.

The preservation of human life, and the endeavour to avert some of the most distressing calamities to which our species is liable, either from professional avocations, from the enjoyment of healthy amusements, or accidents over which we have no controul, are certainly the most interesting pursuits that can engage the attention of man; and those who have been so fortunate as to have made successful efforts to this end have great cause for self-congratulation. At the same time, they ought rather to consider themselves as having performed a Christian duty, than as being entitled to praise. If, however, anything can possibly give greater importance to such an object, I may be allowed to say, that it becomes a matter of increased consideration to this country, when the point principally in view is to relieve our fellow-creatures from death in its most appalling form, and especially occasioned by the fury of the elements.

The rescuing of Mariners from shipwreck, without weighing its importance in the scale of humanity, imperiously claims our attention, as having peculiar reference to the sailors of Britain, who are the bulwarks of her strength and the protectors of her glory; whose ardent spirit, daring intrepidity, and contempt of death and danger, have advanced our Naval Fame above that of every nation now existing. Let us not be unmindful how many blessings have been insured to us by them, and that it is through their energies that our commerce has been increased to an extent unprecedented, both in the annals of our own country and of other rich and mighty nations.

It is scarcely possible to conceive a situation more forlorn, or more intensely piteous, than that of persons on board a stranded vessel on a lee shore, the proximity to the land affording them no means of escape; when, from the raging of the storm, the effecting of a communication by means of a rope or line from the shore to the ship by manual exertion is impossible, and the agonized crew are seeking refuge in the rigging, to which they lash themselves as a protection from the overwhelming surge that is breaking over them, imploring that aid which you are unable to give.

Such heart-rending scenes were not unusual formerly: a most fearful one the narrator of this detail was doomed to witness on the 18th of February, 1807, at the back of the Yarmouth Pier, on which occasion every effort, by the methods then in use, was tried, and every exertion in fruitless attempt was made to convey a line on board, although the distance from the shore to the wreck did not exceed FIFTY YARDS. In this instance the distressing sight of SIXTY-SEVEN fellow-creatures perishing was an appeal to the heart, forcibly demanding the production of other plans more efficient, that would have rescued the unfortunate sufferers, and be the means of preventing a recurrence of similar disasters.

The following are a description of the apparatus produced, and of their application in cases of difficulty and danger, which I shall divide under the two following heads :—

FIRST, the construction of apparatus for effecting communication with vessels stranded on a lee shore, with directions for their uses in preserving the lives of the people on board during the LIGHT of day, and also the extreme DARKNESS of night.

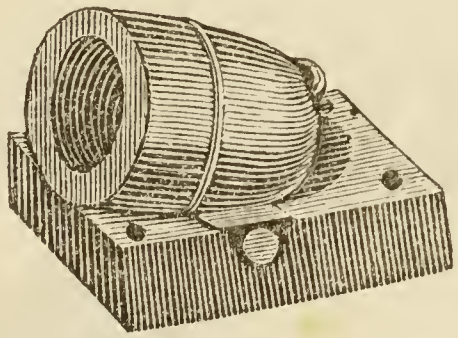
SECONDLY, the apparatus requisite, and method of its application, for affording assistance in the most violent storms to vessels in distress at a distance from land, as well for the PRESERVATION OF LIFE and PROPERTY, as the PREVENTION OF SHIPWRECK.

A vessel stranded is one driven on shore, like the one here shown; and bears a resemblance to the situation of H. M. gun-brig Snipe,

which will serve also to show the difficulty of giving assistance in a

violent storm by manual exertion to throw a rope by hand against a furious wind; it will point out at the same time the impracticability of forcing a boat by the power of oars over a high raging sea, and the impossibility of applying this mode of relief from the ship to the shore. It may be proper, before I proceed further, to state, that a rope projected over a vessel, and falling on the rigging, is termed 'communication;' and I shall now endeavour, by a progressive explanation of my plan, and the illustrative wood engravings, to point out the means that have been successfully employed to effect this important object.

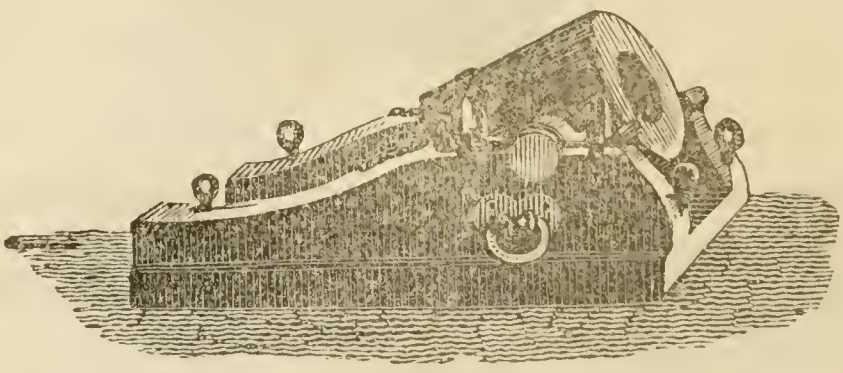
The pieces of ordnance required for this service should be as light in their construction as the purposes for which they are intended will admit of—at the same time, of sufficient power. However, portability must be considered the very first essential in this service; a brass $5\frac{1}{2}$-inch mortar will project a 24-pounder shot, with a $1\frac{1}{2}$-inch rope attached to it, the distance of 200 yards and upwards against the most powerful wind; the mortar on its wooden bed weighs about 3 cwt., may be carried on a hand-barrow by two persons with ease. A mortar of this description will give an adequate power to haul off a boat to a stranded vessel, when the crew are unable to assist themselves. The application of a small and very portable mortar of this



kind offers considerable advantages, by facilitating communication when the stranded vessel is in momentary danger of going to pieces, and particularly when the crew are enabled by their health and strength to profit by the cord that is projected to the wreck; for by a cord a rope may be conveyed, and by that rope a hawser or cable; it may also be expeditiously despatched by a man on foot having a frame containing a log or lead-line, coiled for immediate application, slung as a knapsack, with a small mortar in a socket across his shoulder, and a

pouch belted round his waist, containing ammunition, &c., as here represented.

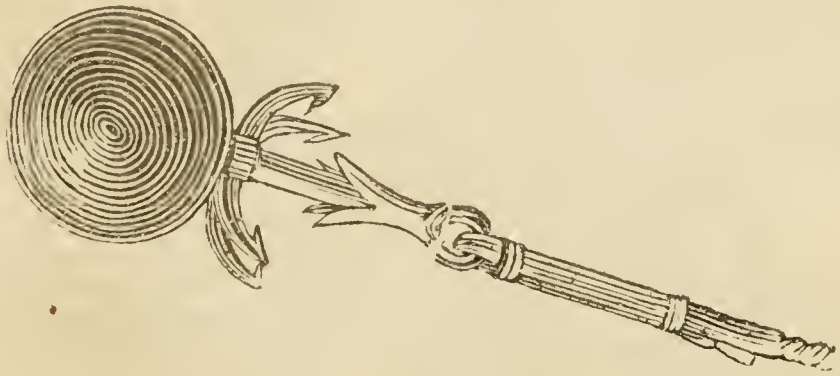
A howitzer with its carriage, as here shown, has been much approved for the service, and even when of large construction, is conveniently removed from place to place by slings, similar to those used by brewers.



Mortars, as well as howitzers, I have ascertained by experiment, obtain a considerable augmented range, by a cylindrical chamber with a spherical bottom, and ante-chamber at its extreme base, to

inflame the charge of powder at the centre (similar to the great improvement on modern fowling-pieces) thereby producing an instantaneous explosion, for the whole strength of the charge to act at once on the shot.

The shot necessary for the use of the larger mortars are two; the one, a 'round shot, merely for the purposes of communication. This is made by introducing a jagged piece of iron, with an eye at the top, into a hollow sphere, securing it with boiling lead, or by drilling a hole through a solid ball, and passing through it an iron with an eye at the top, taking care it is well riveted at the bottom; the other, a barbed shot,



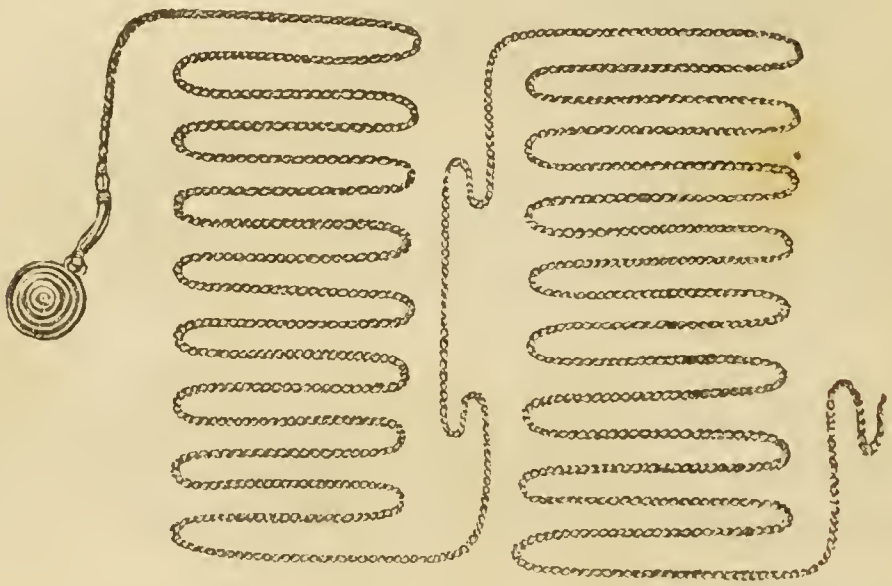
intended to give relief by hooking in some part of the wreck, and securely holding to whatever it affixes, for hauling off a boat.

The connecting a rope with a shot, and preventing it from being burnt by the powerful inflammation of gunpowder, may be deemed the principal merit of the service, and stout strips of hide, plaited extremely close at the eye, effect this important object.

The hide should be kept pliant by moisture, and be at least two feet beyond the muzzle of the mortar, and the greatest care taken that the rope is firmly secured in the loop at the end of the connecting medium. Before I leave the subject of shots for this service, I must

observe, the powers of a small mortar may be increased by giving additional weight to a shot either in an oblong or pear-shaped form, having found by experiment that, by an increased weight, the momentum of the shot over the line does considerably augment its range.

The rope for the service should possess PLIANCY, *strength*, and *durability*. The first is required that it may obey, without obstruction, the violent impulse occasioned by velocity of flight in the shot; and so indispensably necessary is this pliancy, that if it be interrupted even by a single kink, from its being *hard* twisted, the rope will assuredly break, even when of considerable circumference; the necessity of strength and durability is so self-evident, that it is needless to treat on them. No part of the service requires so much attention as the laying of the rope; if the beach be even, and free from large stones, it may be laid in compartments with certainty, thus:

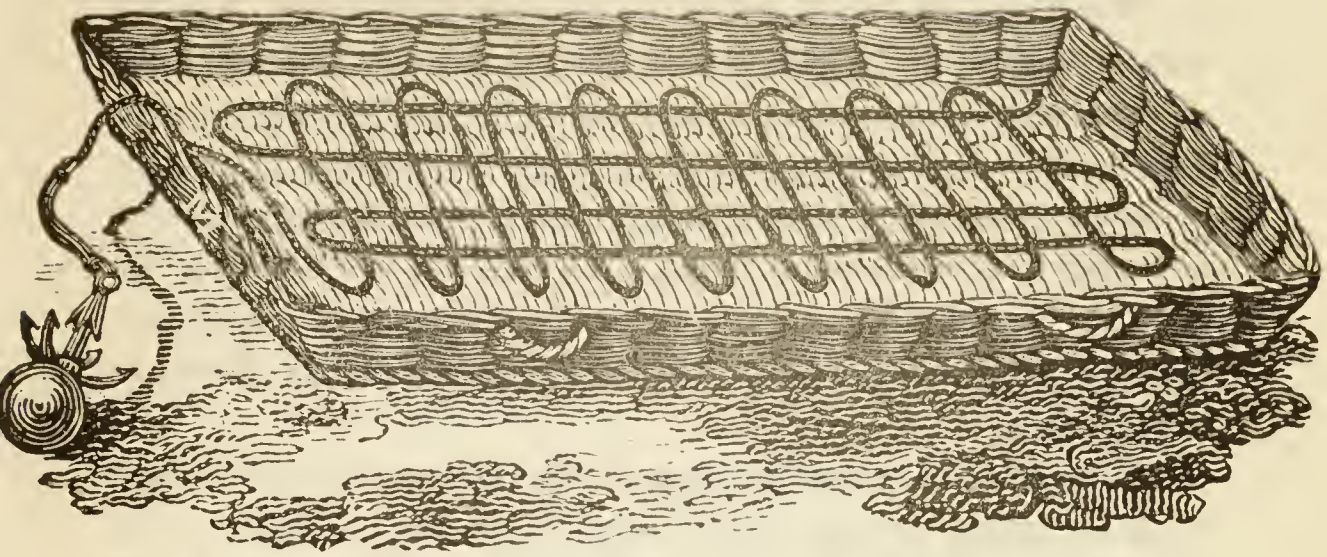


The advantages of this method are, that it will allow the eye rapidly, (yet correctly, just before firing) to pass over the different compartments, and discover if any fake has been displaced by the storm, or has by any casualty come in contact with another part, which would at once defeat the effect by breaking the rope. It may also be coiled in the manner used in the whale-fishery, and in the method termed chain-faking.

As all these methods of laying the rope occupy time to place it with the care necessary; and as it has repeatedly happened that vessels, very soon after grounding, have gone to pieces, and all hands perished, it was necessary to produce a method of arranging the rope,

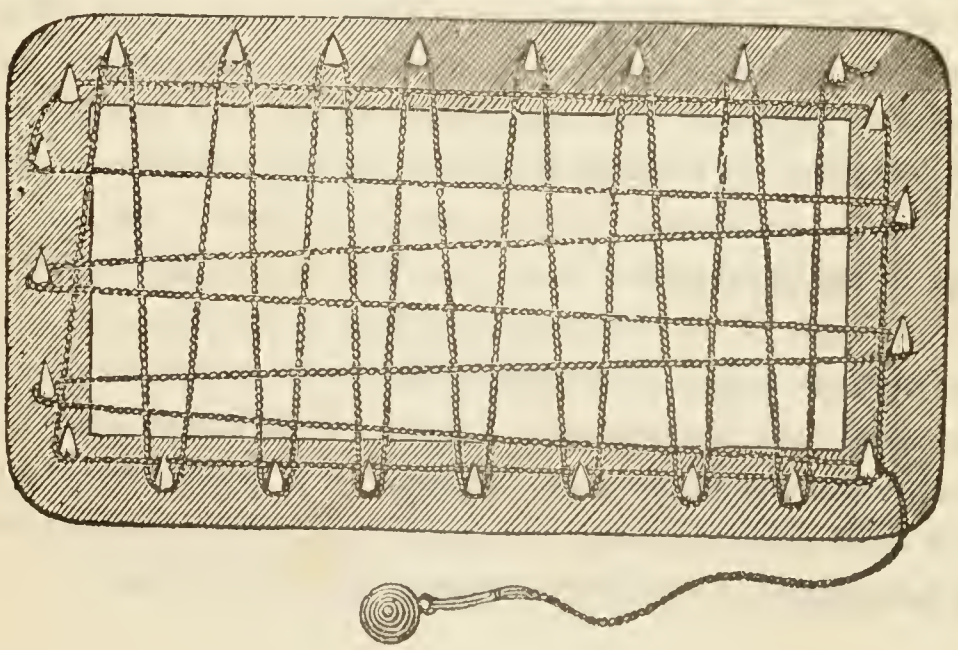
THE RESCUE OF A CREW WHO ARE UNABLE TO ASSIST IN THEIR OWN PRESERVATION.

so that it could be immediately projected as soon as it arrived at the spot. None proves so effectual as a rope brought ready laid in a basket,



and that none is SO SIMPLE, PORTABLE, of such SMALL EXPENSE, and SO EFFECTUAL, the testimony of repeated practice has confirmed. One or more ropes may be laid on the same basket over each other.

As the need of assistance in winter is so much more likely to be required in the NIGHT than day, from its greater length at that season, and supposing the first attempt to throw the rope from the basket over the vessel should fail, difficulties might occur, from the want of LIGHT to relay the ropes with correctness; it became, therefore, necessary to render it practicable in the dark; particularly where rugged or uneven ground prevented it being performed by the former directions. It is therefore to be effected on an oblong frame,



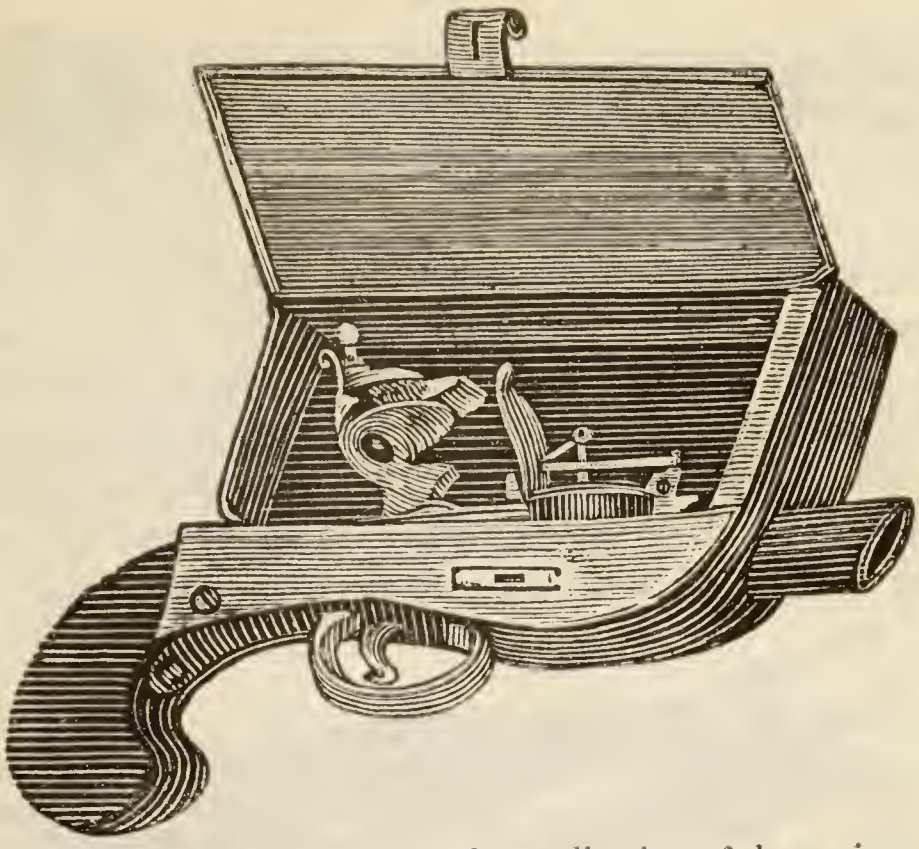
having, at equal distances round its edge, conical pegs, tapering from their base to the point, on which the rope is faked in tiers, alternately along and across.

This faking the hand, guided by the pegs, will perform with the utmost correctness, in darkness as well as by day. The rope being all faked on the frame, and covered with a lid, having corresponding holes in it to receive the points of the pegs, and secured by lashings or straps on the sides; when this apparatus is called into use, nothing is required but to invert it, unbuckle or untie the side fastening, lift up what was the bottom part, draw out the pegs, and leave the rope ready laid on what before was the lid, but which then serves as a platform.

The greatest care must be taken to keep the mortar dry, not to load it till everything is ready, and it is then to be instantly fired. As it would be impossible to prime it with loose powder in a storm, a tube may be constructed of common writing-paper, the outer edge being cemented with a little gum, and filled with finely-powdered or mealed gunpowder, made into a paste with spirits of wine; and when in a drying state, if a needle is thrust through the centre, and the hole it makes left open, when inflamed, a stream of fire (from the atmospheric air) will rush with great force down the aperture, and explode gunpowder at a considerable distance.

Great difficulties having been experienced to keep a match lighted to fire the mortar (on which all depends), a pistol was fitted up with a tin box over the lock, to protect it from the wind and rain; the flame of which, at the discharge, is so dilated by the barrel being cut transversely at the muzzle, as to require but little exactness in the direction of the aim. Two occurrences of this sort induced me to inquire whether, by a chemical process, instant and certain ignition might not be produced, to prevent similar accidents: one was occasioned by my pistol getting wet, from the sea washing over it, and the whole crew of a vessel nearly perished in consequence; and the other, from my match being extinguished by the deluge of rain falling at the time, and, consequently, a portfire could not be lighted. To prevent future disappointments, explosion is to be effected by a mixture of oxymuriatic of potash and sugar-candy, which produces immediate inflammation on coming in contact with sulphuric acid.

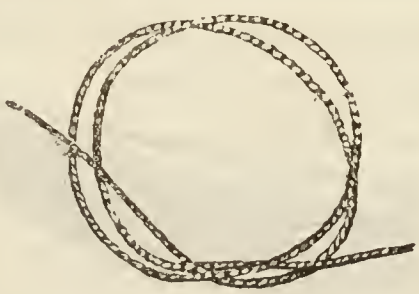
ESTABLISHING COMMUNICATION WITH A STRANDED SHIP.



It is next necessary to explain the application of the various apparatus to the purposes of gaining communication with a distressed vessel driven on a lee-shore, and for the rescue of the crew.

When a rope is thrown on board, the crew, if not extremely exhausted, will at once secure it to some part of the wreck; and, indeed, it is almost unnecessary to offer anything else than a rope, as the inventive genius of a sailor would, in most cases, supply every other deficiency.

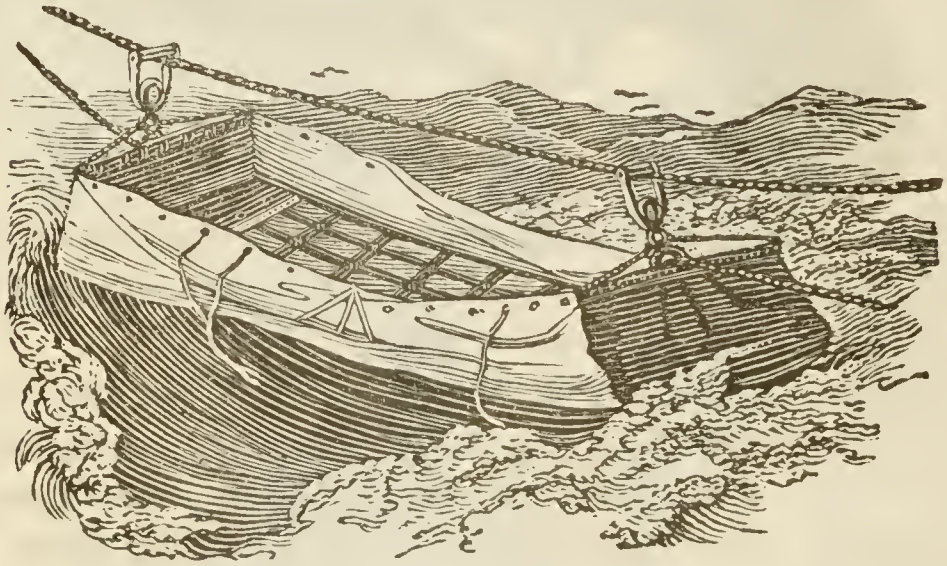
The securing of a person in a clove hatch, thus—



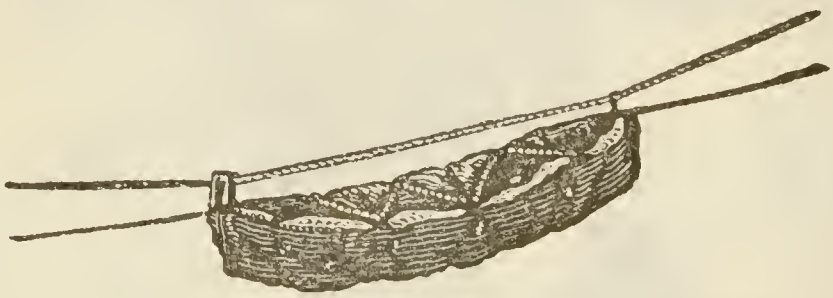
appears a dreadful alternative; but its success has been confirmed in saving upwards of fifty men and several women.

The girdle is intended for persons on board, who, from fear or agitation, are deprived of confidence of being brought to the shore in safety by a clove hatch. It is filled with cork-parings, in the form here represented; and is found effectually to prevent the wearer from all danger or possibility of drowning.

The other methods of bringing persons to shore, all of which have succeeded after communication has been effected, are by a cot, for timid females, children, sick, wounded, or infirm. The whole of the bottom of the cot is cut out, and replaced with strong netting, to prevent the water from collecting in it; for, when travelling backwards and forwards, it might endanger the lives by drowning, and, by adding much weight, would retard or destroy its operation.



The use of a hammock stuffed with cork is, for protecting persons from injury when dashed among rocks or upon stony beaches.



The snatch block with a sling is, for bringing the people in safety from the stranded vessel, and will be hereafter exemplified.

Before I exhibit the application of these means of preservation, I must point out the code of signals I have devised, between the shore and the ship, for a mutual understanding, as the raging storm precludes all possibility of oral communication; and the most simple signals for this purpose are gestures of the human body.

DIRECTIONS.

The signal man, or person in charge of the mortar, will stand clear of the crowd, and place himself in front of a small flag, and will, according to the service required, put himself in the following attitudes:—

No. 1.—Are you ready—or look out for the rope; we are preparing to launch a boat to you.

No. 2.—Secure the rope; bend a warp or hawser to it, for us to draw it on shore for the boat—or for us to send you a stout rope, to be made fast to some firm part of the wreck, that we may haul off a boat for bringing you in safety to the shore.

No. 3.—Haul away—to receive a stout rope, snatch block with traveller, for working a cot, hammock, or sling, to bring you on shore.

No. 4.—Haul on board sufficient of the line to ensure a continued communication for you to enclose yourselves in a clove hatch—take care, in jumping overboard, to clear the wreck.

SIGNALS, IN REPLY, FROM THE SHIP.

No. 1.—A man in some conspicuous situation will wave his arm

three times horizontally, or across him, to denote "Yes," or ready: if he has a hat, let him take it in the hand he waves.

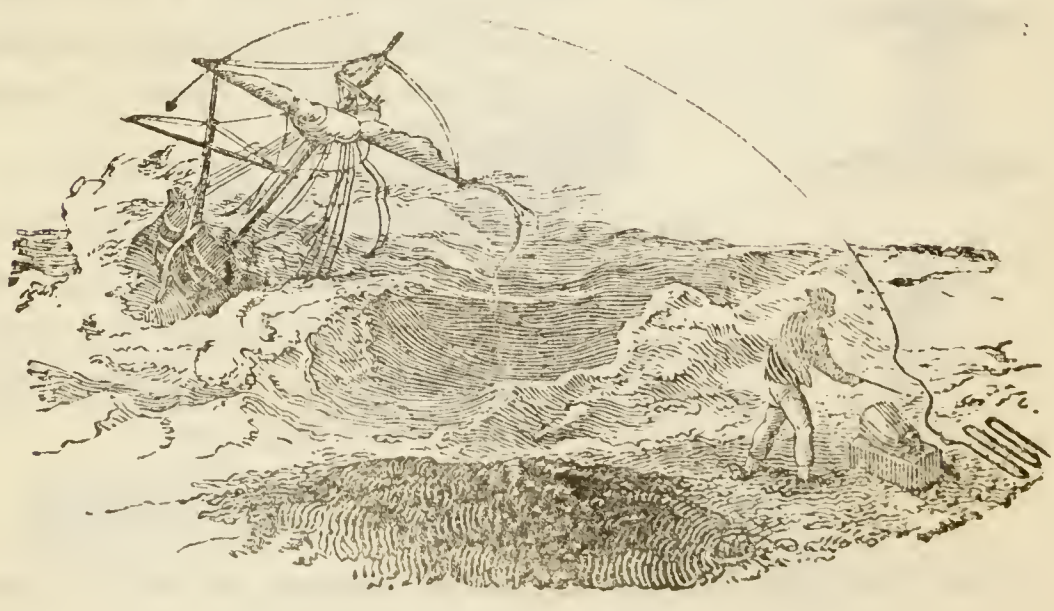
No. 2.—Three times up and down, to answer "No," or not ready.

To render these human signals distinguishable in the dark, as a preparative, a blue light should be fired; then let the signal man have a lantern in each hand, and substitute for the flag a large well-lighted lantern at the head of the staff. This lantern should have loops on the outside behind to receive the staff; at the back of the lantern within a highly-polished reflector, or pieces of mirror, should be placed opposite the lens. Thick glass, cut to angular points in front, is an excellent lens, and will diffuse a light sufficient to make the operations on the shore distinguishable to those on board the stranded vessel.

DIRECTIONS.

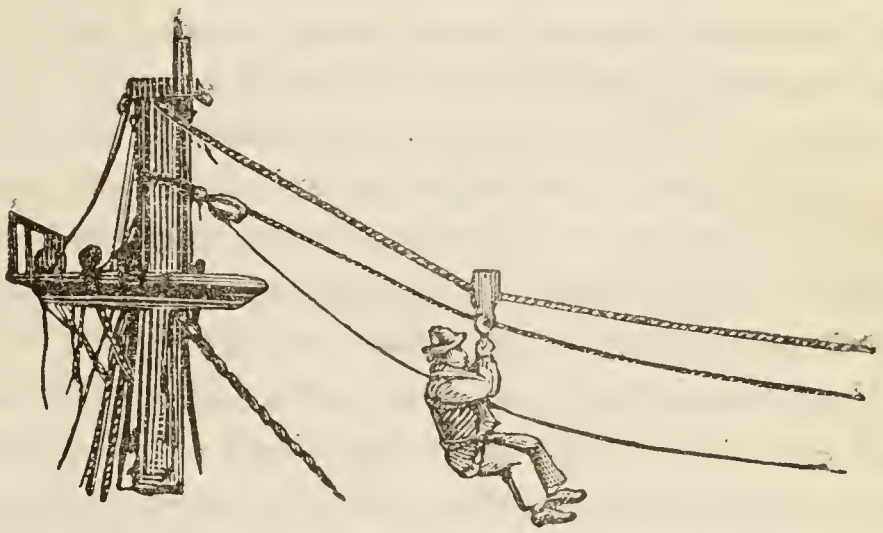
Persons in charge of the apparatus must, when the vessel takes the ground, and the wind is blowing sideways along the shore, in proportion to the strength and obliquity of the wind, point the mortar to windward of the object at a low elevation, that the slack of the rope may with certainty fall on the weathermost part of the rigging of the wreck.

When the wind blows directly on the shore, the mortar is to be pointed at the vessel; the signal being made, it is immediately fired, and communication is gained.



A MAN BEING RESCUED FROM A WRECK AT SEA.

On the rope being thrown on board, the crew, who are generally assembled on the tops to prevent themselves from being swept away, will secure it, and haul on board by it from the shore a large rope, and also a tailed block, rove with a smaller rope, both ends of which are to be kept on shore; the crew will then make fast the end of the large rope below the cap, and secure the tailed block under the large rope. After this service is performed, the people on shore will pass the end of the large rope through the rollers at each end of a hammock, or cot, of a snatch block, with a sling attached to it, as may be required, and they will keep it in a proper degree of tension; the ends of the small rope being made fast to the snatch block, it is worked to the ship and back by the people on shore, or from the ship's tops, in the following manner:—



The sling is large enough to hold a man, who will, on getting into it, pull down the slide, or button, secure himself in, and, safely lashing himself by the waist to the upper part of the sling, prevent the possibility of falling out. On his being landed, it will return to the vessel, until every person is brought from the wreck, as here represented. The application is precisely the same either for the cot or hammock.

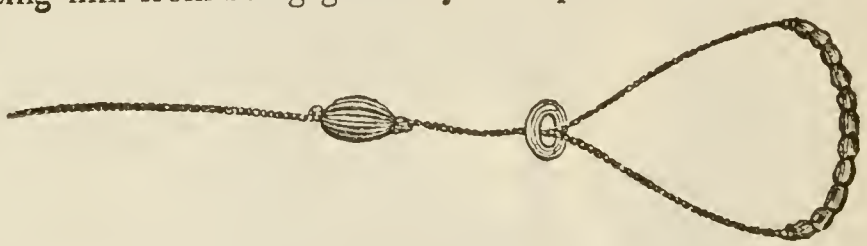
The projection of a rope by the force of gunpowder may be applied to other important services: that of communicating with persons, and effecting their escape from lofty buildings on FIRE—a subject that will soon be submitted to the public; also facilitating the move ment of troops across a country intersected by rivers, the passing of

rapid streams, &c. On the latter subject, I have recently received the following information from Canada, which I will give verbatim :—

"After all attempts had failed to construct a bridge over the falls of Chandian Ottowa River, as no boat could live near it, Lieutenant-Colonel By, of the Royal Engineers, ingeniously applied Manby's plan, and fired a small rope over the rocky island, by which chains and strong iron cables were dragged over with crabs, and on them he succeeded in raising a beautiful wooden frame bridge."

A LIFE ROPE FOR AFFORDING PROMPT RELIEF TO PERSONS WHO MAY HAVE FALLEN, OR BEEN WASHED OVERBOARD.

It consists of a rope, having a noose that can be enlarged or contracted by a small wooden slide or button, through which the spliced or double part of the rope passes. This noose is kept open by a piece of whalebone, that passes with the rope through a number of corks which keep it afloat ; a buoy upon it of cork fixed on the rope makes it easily to be grasped by a person in danger, which prevents it from slipping through his hands, as might happen with a common rope. By this buoy (when resisted at the other end of the rope) he can support himself while he is putting the noose over his head and arm ; having done which, he can secure himself in it by pulling the slide or button ; thus secured, he may be drawn to the ship and up the ship's side without any injury, the corks performing the additional service of protecting him from being galled by the rope.



In offering this production to your notice, I feel more than common gratification, from the persuasion of the incalculable benefit that must arise from this very simple application. I am led to this remark from the opinion of the numerous professional persons who have seen it ; most of them declaring, that in the course of their service theyhave seen occasions when it would have saved innumerable lives ; likewise, from a testimonial that appears in the Annual Report of the Royal Humane

Society for the year 1814, in consequence of its having been exhibited to that institution.

"That the committee of that Society cannot too warmly recommend it, from the great good derived from its use in preventing the drowning of a *great number of individuals* by it last winter on the Thames and Serpentine rivers."

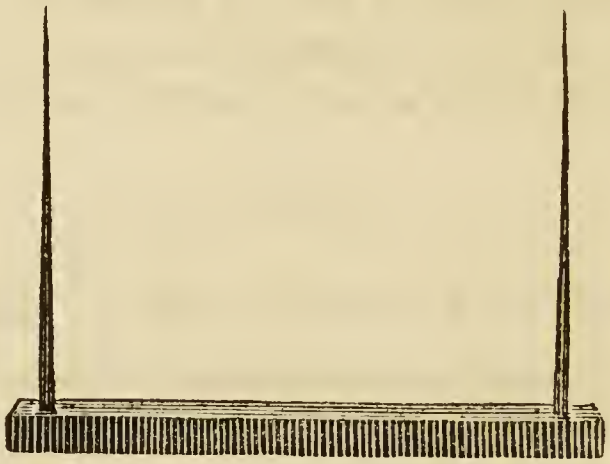
In addition to this pleasing testimonial, I have by me several certificates to the many persons it has been the means of rescuing from inevitable death; and from it appearing, that since its production not a winter has passed without several owing their preservation to it.

DIRECTIONS TO BE APPLIED DURING THE DARK.

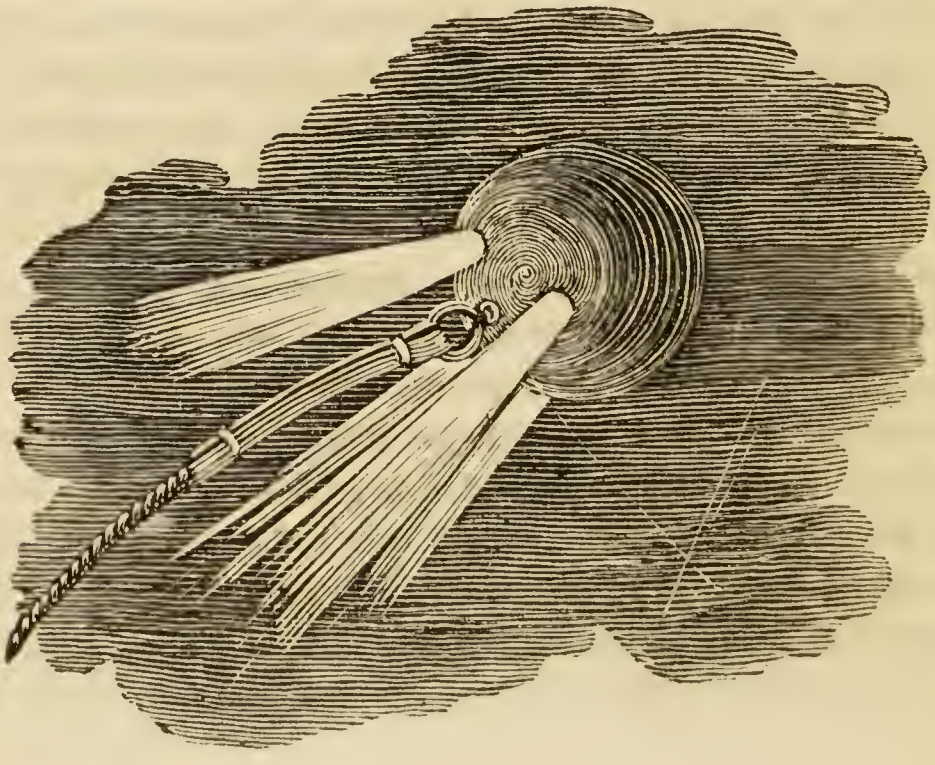
With regard to effecting communication with stranded vessels in the dark, having found it impossible to discern the situation of the unfortunate vessel, I was induced to try the means I shall here describe, in consequence of the loss of a Swedish brig, which came on shore in a dark and dismal night, on the 5th of January, 1809, at Happisburgh, and was reported to me in the following words:—"Many attempts had in vain been made for seven dreadful hours, to effect the communication with a round shot, but its flight could not be observed, either by the persons on shore or those on board, nor was it accomplished until the dawn of day favoured the intention; the vessel having, however, during this long and awful time been much strained, just as the cot was reaching her she went to pieces, and all on board perished."

To provide a remedy for such evils in future, three requisites were found necessary:—*first*, to devise the means of discovering precisely where the distressed vessel lies, when the crew are not able to make their situation known by luminous signals; *secondly*, to produce a method of laying the mortar for the object with accuracy; *thirdly*, to render the flight of the rope perfectly distinguishable to those who project it, and to the crew on board the vessel, so that they cannot fail of seeing on what part of the rigging it lodges. To effect the first purpose, a hollow ball (of such a size as exactly to fit the mortar) was made of cartridge paper, pasted together to the thickness of half an inch; it was filled with balls of a composition which

the makers of fireworks call stars. The fuze, firmly and closely fixed in a hole in the upper part of this ball, was so graduated as to communicate with the gunpowder in the ball, for bursting it, and inflaming the stars at the height of 300 yards. On its explosion, the stars spread a brilliant light during a space of time sufficient for gaining a clear view of the object, and afforded leisure for a frame with two upright sticks (painted white, to render them the more discernible in



the dark) to be placed in exact line with the vessel, by which the aim of the mortar, on being brought behind the frame, can be directed with accuracy. A shell affixed to the rope, having holes in it to receive fuzes, is filled with the fiercest and most glaring composition, which when inflamed, at the discharge displays so splendid an illumination of the rope, that its flight cannot be mistaken, and the crew are able to secure it, and to see on which part of the rigging it falls.



PREVENTION OF SHIPWRECK.

Having concluded my observations on the *preservation* of shipwrecked mariners when driven on a lee-shore, I shall now proceed to offer practical suggestions on the subject of PREVENTION of shipwreck, by affording assistance to vessels in distress at a *distance from the land.* I look back on no part of my various designs and efforts for stopping the waste of human life, or preservation of property from shipwreck, with more satisfaction; nor do I consider any of greater importance to the maritime world, according to the opinions of men best able, from their habits of life and experience, to judge of their utility, who have declared their opinion, "that enabling boats to go from a *flat beach,* in violent gales of wind, to the assistance of vessels in distress, would greatly tend to diminish the immense losses the shipping interest have hitherto suffered."

I should observe, that if an anchor is laid out, with a stout rope attached to it, from the shore, for the purpose of hauling off a boat, the rope is imbedded in the sand; this I have repeatedly seen tried, and the result was found to be invariably useless, from the cause just named. Mooring anchors have been recurred to in different ways; being sometimes placed at about 80 yards distance from each other, parallel with the shore, as far as the range of a mortar will allow, and connected together with a strong rope or chain, suspended by a powerful buoy, to prevent it being chafed on the bottom should it be rocky, or imbedded in the sand when such is the nature of the ground. On a grappling shot being thrown over the centre, and the slack of the projected rope gathered in, the grapplings catch, and afford a power for the people to haul off the boat. This plan was well adapted to some situations, particularly to steep shores; but some more powerful agency became necessary for very *flat* beaches, as its utility depended upon the range of a shot, which, when attached to a stout heavy rope, of strength sufficient to haul off a boat, I found could not be projected a sufficient distance by mortars that are portable, and such as are distributed to the different stations. Another objection to this plan, practice pointed out as an insuperable difficulty to such application in a *violent storm,* when a high and raging surf is running: further, the crew being necessarily at the head of the boat for hauling it, the bow is conse-

quently depressed in the sea, and is thereby prevented rising to the waves, and must assuredly fill; besides, the unsteadiness of their situation renders the power of four men on board the boat scarcely equal to one on shore, with many other important considerations. I was consequently urged to bring into practice a more efficient plan, from the following reflections.

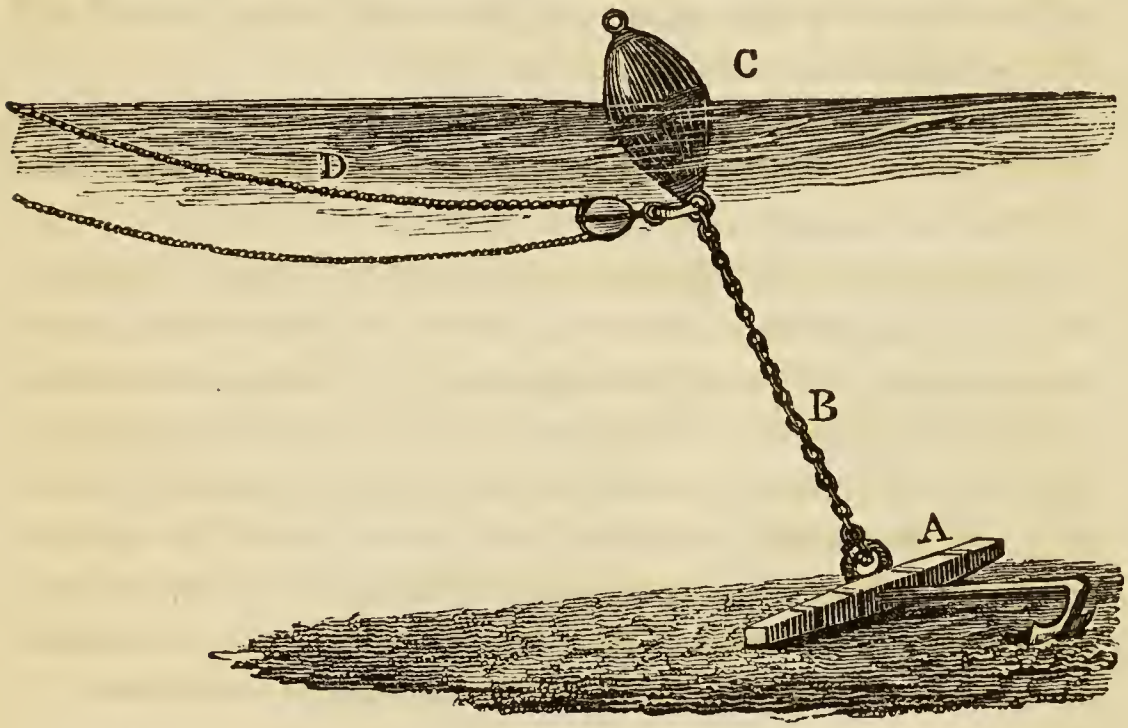
The fact of the occurrence of shipwreck at a distance from land, which, unfortunately, too often happens, makes it evident, that great benefit would result from the production of a plan, whereby a boat might, in the most violent gales of wind, be gotten off from a FLAT beach with facility, and certainty as to the relief of sufferers; it being beyond a doubt, that, by the timely aid of pilots and beachmen, such vessels might be enabled to keep the sea, and reach their destination in safety.

So important has this object been considered, that the Lords of the Admiralty, some years since, forwarded, at my request, to the officers commanding signal stations at places notorious for fatal shipwrecks, the following question:—"Whether they had witnessed instances of vessels in distress, at a distance from the land, attended with the loss of lives; and what where the obstacles that prevented their preservation?" The replies generally were—"That many such circumstances had occurred, from the impossibility of forcing a boat through a high raging surf to their relief; but that if such object could be accomplished, and boats be enabled to go off promptly to their assistance, not only the LIVES on board, but probably the VESSELS themselves, as well as the CARGOES, would have been saved."

Without touching upon the impracticability of forcing a boat, by the power of oars, over a high surf, or stating the difficulties, amounting almost to an impossibility, of effecting the object by the people on board, I shall offer a method, on a principle adopted for various purposes, and applied by me to bring people from stranded vessels, as well as what I have seen for passing a floating bridge from one side of a canal to the other. I therefore submit it, from its great simplicity, being found adequate to the purposes, and from the small expense attending it; in the hope it may lead to its adoption wherever boats are kept, and the conviction that it will materially tend to the *preservation* of LIVES, the *prevention* of SHIPWRECK, the saving from *destruction* an

immense amount of property, and thereby be importantly beneficial to the commercial interests of the country, and to the maritime world.

At a distance from the shore, far beyond where the waves break into heavy surf, an anchor, connected to a chain, is laid out, and the chain suspended by a buoy: below the buoy a large block or roller (confined by a shackle, to prevent its twisting) is fixed to a ring in the upper link of the chain, and a warp reeved through the block, both ends of which being kept on shore, are made fast to some elevated station, as a jetty-head, lofty posts, or dolphins.



A. Mooring anchor, of about three cwt.

B. Chain, of half-inch diameter, of sufficient length to allow for the flow of tide.

C. Buoy, of ample power to keep the chain nearly in an upright position; yet that will not lift the anchor stock from the ground.

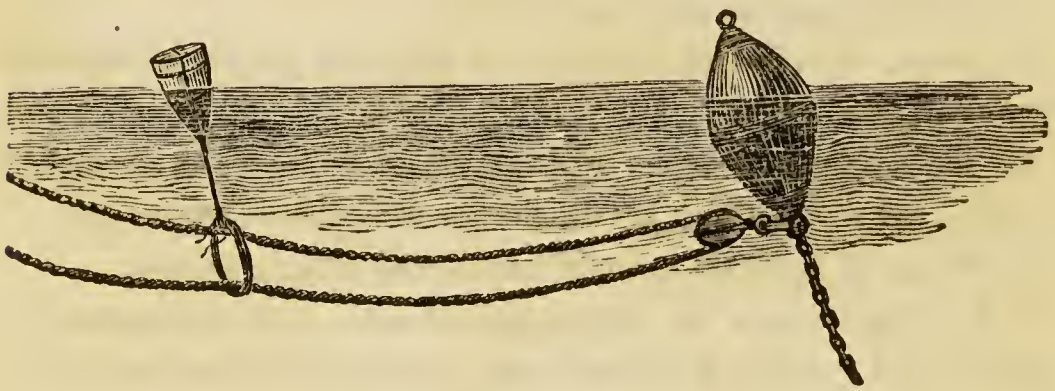
D. Warp, of adequate strength for hauling off a large boat.

N.B.—The block to be well bound with iron, and the swallow of it large enough to admit of splices in the warp freely to pass through it.

In applying the means, both ends of the warp are spliced together, making what seamen term a round rope, or messenger, one part being made fast to the bow of the boat (the weather one, should the wind be not right a-head), and passed on to the boat's quarter, where it is also to be made fast; and great attention given, that BOTH may, when required, be *instantly* cast off.

This being arranged, and the people on shore observing a favourable opportunity, they will haul the boat through the surf, and sheer it, should there be a great sweep of the sea, by the rope made fast to the quarter; thus a service can be performed, by comparatively few hands, that could not be effected by any number of people in the boat, from the want of steadiness of position at that time; besides, the men on board are quiet during this process, and do not impede the boat rising to a sea, and further prevent its filling, which probably would be the case in their attempting to haul themselves off. Thus, as soon as they find the dangers of the surf are past, they would cast off, up sail, and stand away to the object requiring assistance.

The advantages of the plan are, that no shore, however FLAT, and no surf, however NUMEROUS or DISTANT, can prevent this application, which is particularly adapted to the shores of France and Holland, that are represented so peculiarly flat, and, consequently, the surfs so extensively distant, as to defy the possibility of going to the preservation either of life or property; for should the distance be great, warps may be spliced together to produce the aid required; in the latter case, by passing the warp through a circular or oval ring, at a proper distance, to a small buoy, and there lashed by a clove hitch to one part of the rope; the other part, resting on the lower part of the ring, will prevent the warp endangering boats coming to the shore, either from being imbedded in the sand, or chafed by foul ground at the bottom, as here shown.



In using it, the part of the rope to which the ring is made fast is hauled to the shore, and when brought in, the lashing to the small buoy is cast off, and the warp ready for being applied, as described.

I shall be excused, I trust, for adding, that this plan has received the approbation of all to whom it has been submitted, and some have declared, that it has *overcome difficulties* hitherto considered insur-

GOING to a VESSEL REQUIRING ASSISTANCE & THEREBY PREVENTING SHIPWRECK.

mountable ; in proof of which I subjoin the opinions of experienced persons, in a certificate of the crew of the Yarmouth life-boat, who having practically demonstrated its utility, can well appreciate its importance. Their unbiassed testimonial in its favour, makes it incumbent on me to introduce it to public attention, in the hope that this may lead to its universal adoption.

"We, the undersigned crew of the Yarmouth life-boat, having examined the plan submitted by Captain Manby, in a simplified form, by forcing the above boat from the shore, through a heavy surf in violent gales, by means of a warp suspended by a buoy attached to a heavy anchor, are perfectly satisfied that the plan is fully adequate to the purpose intended.

"And as we have experienced the result of such a plan, by its enabling us to go readily from the shore in one of our largest beach boats to the assistance of a foreign vessel, brought into these roads in great distress, which was making signals for urgent necessity, being without stores, fuel, or provisions ; we do hereby certify, that we could not possibly have gone to them, in consequence of the violence of the gale and high surf, without the aid above-named ; and we also certify, that on another occasion, we went to the assistance of a collier, driven on the Scroby Sands, when all attempts by other boats had failed.

"We therefore cannot too strongly recommend the plan for enabling boats to go to vessels in distress at a distance from the land; from the persuasion that, if adopted where boats are kept, it will be highly important to the shipping interest of the country, from the lives and property that will assuredly be saved by it."

I must further observe, the plan, in reference to Yarmouth, from its peculiar situation, (being probably the most dangerous part of the British shore of the North Sea,) renders it of the first consideration to that place ; as it will entirely remove, in future, the many interruptions that occurred (when it was a great naval station) between the ships of war in the roads and the shore, in violent and often long gales of wind. Its value on several other occasions cannot be calculated on ; in securing with promptness the landing or sending off messengers charged with despatches ; the disembarking of the mails or passengers from packets, when they cannot make Harwich, in tempestuous, adverse weather; with many services importantly connected with the affairs of state, and beneficial to the commercial interests of the country.

ON LIFE AND OTHER BOATS.

I shall next call your attention to some observations on life and other boats, and submit designs for giving the effectual properties of life-boats to the boats ordinarily used upon the beach, in different parts of the kingdom, with the view of general as well as universal adoption of efficient life-boats.

From considerations of their vast importance in affording assistance to distressed vessels, either in the rescue of life or property from shipwreck, great attention has consequently been devoted to the subject of life-boats; and various descriptions of them have been invented from time to time, which, from some peculiarity in structure, or other property, the projectors have too fondly imagined to be worthy of the name of life-boats. My design is not to enter into their peculiarities of structure, but briefly to submit remarks on boats, resulting from long practical experience and much observation.

The difficult and dangerous services requiring the use of a life-boat are two:—the one for assistance to stranded vessels, when the case of distress is not far from shore, and the aid of oars only necessary; the other, when the relief required is at a distance from the land, and can be effected only by a powerful boat under canvas.

The indispensable qualities of a boat to be employed in services of imminent danger as a life-boat are, buoyancy in construction and power to resist upsetting and prevent sinking, although filled with water; in addition to these properties, those required for the rescue of persons at a distance from the shore, it is indispensable for them to go well to windward. I will commence with the boat known by the name of Greathead's Life-Boat: it is excellent at the entrance of a harbour, and for going out with the receding tide to a vessel on a bar, as at Sunderland, where there is nodifficulty in launching, nor much propelling power required, or the aid of canvas necessary; but from a flat shore it is entirely unfit, from its unwieldy size and weight, rendering it so difficult to be conveyed to apoint of danger; added to this, its lofty stem exposes it so much to the force of the wind and wave, as to make it utterly impracticable to force it through a high surf. It differs also from the form of boats peculiar to all the coast I have seen, which is of the first importance for a life-

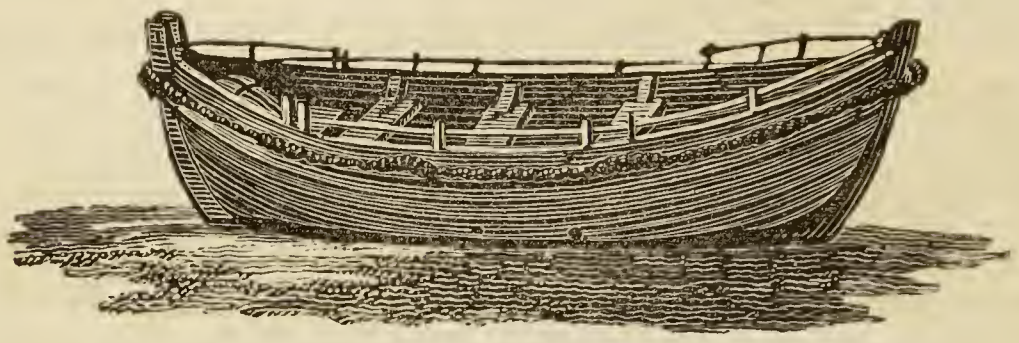
boat, that is to resemble in structure as much as possible those which the PILOTS and BEACHMEN are accustomed to, and have great confidence in, not only because it is necessary to humour the prejudices of men whose services are required, but because whatever is calculated to stimulate and draw forth their exertions, at the same time, tends to increase the chance of saving life from shipwreck.

The next description of boats to which I call your attention are, those supplied to some stations on the coast of Norfolk (as Winterton, &c.) They are extremely well adapted, after communication is gained, to be hauled to by the rope, for saving the people from a stranded vessel, but never were any (with the exception of GREATHEAD's) more unadapted to the stations in which they are placed—that of going to the assistance of vessels in distress that may have struck upon a *distant shoal*, particularly that extensive one, called Happisburgh Sand, opposite to those stations, about the distance of nine miles from the land; a shoal on which more fatal occurrences of shipwreck have taken place, than any, perhaps, in the world, and which it would be impossible for such boats to reach in a *violent storm*, with the wind *blowing* DEAD upon the shore, either by the power of oars or under canvas.

I have ever been most fully persuaded, that nothing would tend more to the interests of navigation than giving the properties of preservation to local boats, and thus entirely supersede the necessity of expensive life-boats: in proof of which, at the meetings of the Norfolk Association, I opposed their furnishing the boats just adverted to, from their great expense, their inadaptation to the service required of them, and also from well knowing the fact, of a strong prejudice prevailing amongst boatmen against life-boats, particularly if not of a similar construction with those they use, knowing that they consider such construction only effective in tempestuous weather. My earnest recommendation was, to give the effectual properties of preservation, in a simple manner, to local boats; by which means danger would be greatly diminished, and the coast supplied with effective boats at a comparatively small expense, and their funds reserved to reward the exertions of intrepid pilots and beachmen.

Having attentively examined the construction of boats on all the coasts visited by me, I never yet have seen any that so nearly possess the properties required, or are calculated to be rendered effective life-

boats in a prompt and simple way, as two classes of boats used at Yarmouth; the one called the beach ferry-boat, the other, the beach yawl. The ferry-boat is used to weigh lost anchors, and other hazardous service in stormy weather, and unites the property of great buoyancy to the least liability of danger from upsetting.



To render this boat an effective life-boat, it is only required, by giving to the inside an air-tight deck (about one foot from the floor) firmly fixed, to confine small air-tight casks (like those used by the herring fishers, termed bowls) placed vertically; so that, should the boat's bottom be stoved, the buoyancy is still preserved; on the other hand, should the sea break over, and even fill her, the water, being confined to the centre, may be immediately discharged, by taking out the plugs of the tubes that go from the deck through the bottom. A platform, raised at each end for shipwrecked men and the boat-steerer, who are prevented being washed out by a rope distended by stanchions that go from the stem to the stern, and a rope running fore and aft on each side of the thwarts, or seats, secures the rowers: likewise a stout rope surrounding the outside, just below the gunwale, prevents the upper part of the boat from being stoved, when driven with force against a vessel, pier, &c.*

The yawl is a boat alike sharp at each end; therefore is capable of being moved either way advanced. In such, the beachmen of this coast have the fullest confidence; they handle them with pleasure; they have used them from their infancy; they know their adaptation to what is required; nay, so far does this feeling exist, that I have been told by active and intelligent beachmen, that they would prefer their own boats for any service, however hazardous, to life-boats, could their own but be got in safety from this flat beach over the surf, and be protected

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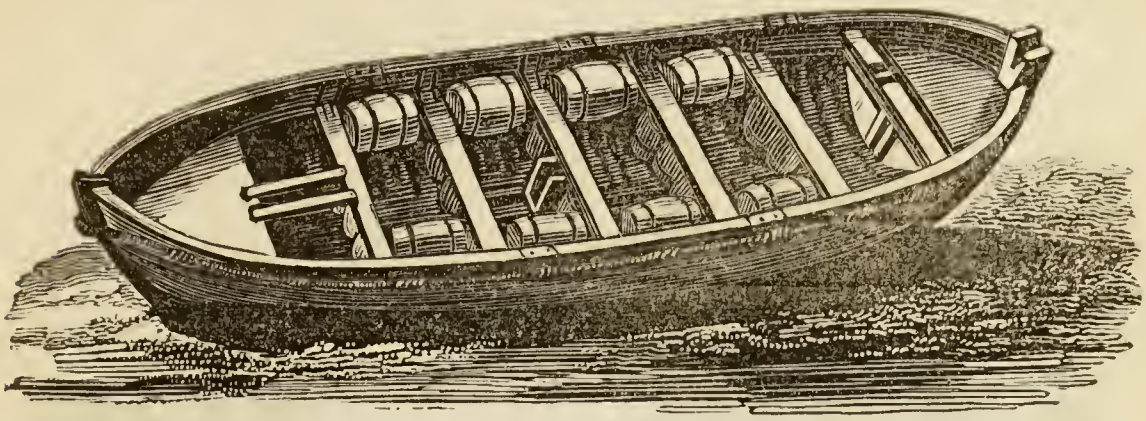
* See model in Case (B).

against the danger attending broken water, in which their being immersed would be necessarily attended with the loss of their lives.

The first of these objects I have happily had the means of effecting by my plan for forcing boats with facility

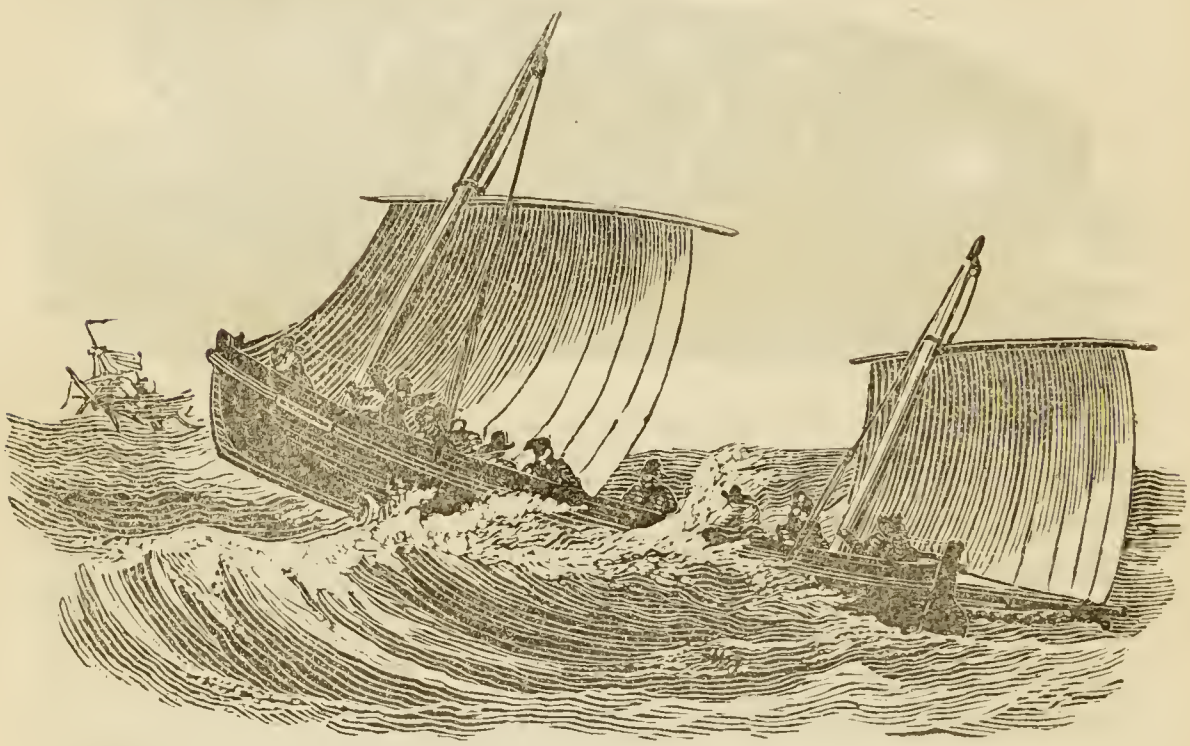


and certainty over and through the most raging surf : the next desiderata are efficiently given by means of air-tight casks, as shown by the above. Even ships' boats might also with great advantage be provided with them ; and if, when at sea, the boats hanging from the quarters or sterns of vessels were fitted up in this manner, many a LIFE would certainly be saved.

To resist upsetting, and to prevent sinking, casks may be lashed horizontally within the gunwale, or placed vertically under the thwarts ; those in the former position will enable the boat to regain its former gravitation when filled with water, from the lee side being depressed by the violence of the wind, or when thrown out of its proper position by the force of the waves ; while, on the other hand, the vertical casks will give a powerful degree of buoyancy, for the boat to relieve itself by less specific gravity, on the plug-holes at the bottom being opened. I need scarcely add, that it is indispensable that the casks employed for such a service, should be strong and staunch ; and those that had previously contained oil are, from being saturated with that fluid, the less liable to contract. Another very important point connected with the subject, and equally essential is, to guard against the possibility of a boat being stoved, when driven violently by the waves against the side of a vessel : to prevent this, nothing can be better than a stout rope, secured round the external gunwale, with projections at intervals to break the force of the blow.

Ofthe Yarmouth life-boat I must speak feelingly; first, with pride, secondly, with regret as to its fate ; for in the construction and fitting

up of it, I was indulged with the direction. In its construction the most reputed boat on the beach, combining the qualities of going well to windward, of having a fine bow to meet a sea, being rapid under sail, and answering the helm quickly, was selected by me as a pattern. Below is a correct representation of the boat I mean ;*



and I have only to remark, that it has been proved practically to possess all the properties required, or that I could wish for; and, I must add, that its crew had the fullest confidence in it, they being perfectly satisfied, by experience of what has hitherto been considered an impossibility ; namely, that in the most tempestuous sea, and when FULL OF WATER, this boat was MANAGEABLE, went well to WINDWARD, and answered the helm READILY.

These latter properties were attained by displacing the water at the ends, within the boat, by copper tanks, and giving the great balancing quality of its iron keel to the centre of the boat by its curvature. The boat was furnished with a short gun, placed in the main tabernacle (as the mainmast is not required in a violent gale), for throwing a line on board the wreck, when it is stranded on a shoal, or a bar beyond the reach of a shot with a line to it from the shore ; for in such situations it would be surrounded by broken water, rendering it extremely

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* A correct Model I have placed in the Museum of the Polytechnic Institution, for the admirable qualities it possessed.

difficult, and often impossible, that a boat should approach it without great risk of being destroyed by the masts or yards, from the violent rolling of the vessel. Cases of this kind have occurred, and crews have perished, from the want of such means of communication.

Before the subject of this boat is dismissed, I must claim your indulgence for a slight digression, feeling it may be important to my name when I am in my grave.

On the design for forming an Association in my native county (Norfolk) for Preserving Lives from Shipwreck, the noble Lord Suffield did me the honour to send me a written request to attend at Norwich on that occasion. On such Institution being founded, the general meeting determined that a life-boat should be furnished to Yarmouth. The opinions of the most experienced and practical beachmen were taken, " for what service a life-boat at that place would be most important and useful?" their unanimous opinion was, " going to vessels driven on the Cross Sand (five miles from the shore) in violent gales blowing dead on the land; consequently, a service that could only be performed by a boat possessing superior sailing qualities, and preserving those qualities when full of water—requisites also of the greatest importance in going to save crews on board of vessels, driven from their anchors on the Scroby, by tremendous gales blowing from the land; for, without such properties, the men taken from the wreck would probably perish before they could be brought to the shore."

The qualities of this boat have been tried, her adaptation to her

design proved, her superior sailing qualities confirmed, in beating the Lowestoff life-boat on going to windward nearly three-quarters of a mile in a run of less than three miles; yet this boat was allowed to lay for several months exposed to the injuries of the weather, and depredation, and is now sold to be broken up, and another directed to be built on the model of the Lowestoff boat; her fault being, named "The Manby."

I have not stated these circumstances entirely from feelings of wrong done to myself, but to point out to the subscribers of the Norfolk Association with what facility injury to their funds may be effected from interested motives or private prejudices; also how the object of a patriotic and benevolent institution may be preverted; in the earnest hope that some noble-minded members of the Institution will discourage the line of conduct I have long experienced, that compelled me to withdraw myself from the above-named Association, except to see its funds faithfully applied.

Having brought to a close a description of the apparatus, invented by me for the preservation of life and property from shipwreck; and, I hope, given a sufficient explanation as to their several uses, to make clear and intelligible their application, for the information of those whose possessions on the dangerous coasts of the United Kingdom must have often excited their philanthrophy and benevolence, and the most anxious desire to rescue their fellow-creatures from inevitable destruction. I trust, also, to have satisfactorily established my pretensions to the authorship of the plans brought into use for these important services; in the prosecution of which, I have spent so many years of unceasing labour, and have endured the greatest unkindness, as well as unjust treatment, from many whose stations in life deserve the grossest censure; yet, as far as relates to myself, I feel nothing like a spirit of ill-will: conscious of my own integrity, I look with calmness upon the past scenes of my life; and, as I am drawing fast to the termination of my existence, and incapable of a continuance of that exertion which it was the joy of my heart to pursue, I feel myself necessitated to place in the hands of the British public the following statement for their judgment; from an assurance that they will see justice done, and not allow our national character for humanity and charitable purposes, to be misapplied or disgraced by party consideration and improper prejudice.

England, it is universally acknowledged, stands pre-eminent, not only in physical power, but also in moral greatness. She not only spreads her giant arms over all parts of the habitable globe, but is inferior to none in her institutions at home for every department of intellectual research; and we see throughout the kingdom, societies founded and endowed for the furtherance of every useful art and noble science,—for the promotion of every object that can aid the proficiency, and lead to the extension of genuine knowledge. Not here only is her superiority displayed; but let any opening be discovered by which human sorrow can be alleviated, or calamity of any kind incidental to our nature relieved,—no sooner is the want declared, and the appeal made, than it finds a response in the breast of the benevolent, and the vacuum is instantly filled, and bounteously provided for. If there be one spot in the history of our country brighter than another, it is this ready sympathy with the sufferings of our fellow-creatures. Among the distinguished benefactors to our species was the well-known Dr. Fothergill, who, by his will, made the following bequest:—

> "To the Royal Humane Society of London, 500*l.*; the produce of which is to constitute an annual or triennial medal for the best essay or discovery on the following subjects:—
>
> "1st. On the Prevention of Shipwreck.
>
> "2d. On the Preservation of Shipwrecked Mariners."

The reader who has gone with me so far will at once perceive that, by the documents I have quoted, and which I have elsewhere given at length, I felt justified in submitting my claim for the prize medal to the Society. He will, as one impartial and desirous of even-handed justice, ask whether the invention answers the purpose in view? Whether it be simple, easy of application, and of small cost? Or whether there be any other invention in competition better adapted? And whether the latter is, or has been, or can be, employed? If the latter be found utterly worthless, and the former contain all the necessary requisites, he will then adjudicate accordingly. Has my invention been found, on trial, to be effectual? Is the machinery simple, and of prompt use in the moment of distress? I appeal boldly to the results of its application on, perhaps, one of the most dangerous coasts in the world; and all will acknowledge its complete efficiency. Can any further evidence be desired? But what says the Society?

"The Committee are of opinion, that the invention of Captain

Manby was well known before the death of Dr. Fothergill, which took place in 1814, and was published in the Annual Report of 1808. Every Report was sent to Dr. Fothergill, and, consequently, cannot be deemed the discovery intended by him; whose object was to promote the future exertions and inventions of scientific men, which would be defeated by presenting the medal to previous discoveries, *however important*. The great merit of Captain Manby's plan was also recognized very fully, with plates, &c."

Who can affirm that the enlightened philanthropist was aware of the full extent of the value of my discovery? Who can affirm that the testator meant to exclude me after his death, because he might, by possibility, have known of my invention in his lifetime? And that, because he had made no specific declaration in his will in my favour, I was to be rejected when a subsequent candidate? But the Elder Brethren of the Trinity House, it is said, reported against me,—a circumstance which I most deeply regret, from the high value I set on that distinguished corporation, as conservators of all the shipping that approach and navigate our coasts, and for their zealous endeavours towards preventing shipwreck and preserving shipwrecked mariners, by the establishment of lights wherever necessity may demand them. Unwearied in their exertions, skilful to guard against peril on our sea-girt island, they are prompt, at the first intimation of danger, to fix the warning beacon, and to inspire security and confidence in the anxious seaman. Commerce is the basis of our country's welfare; to facilitate it is our imperative duty. This duty has devolved upon the Elder Brethren of the Trinity House; and ably and vigilantly have they at all times performed it.

Under any circumstances, I think that the Committee of the Society, after acknowledging the importance of my discovery, were not justified in refusing me Dr. Fothergill's medal for my plan of launching boats, since I had not brought it into practice till some years after the Doctor's decease. The plea urged in their letter to me is, therefore, invalid; and the circumstances detailed in my prevention of shipwreck warrant me in asserting, that the award ought, in justice, to have been in my favour.

Thus am I wronged—wronged in being deprived of my due, aud wronged in the slur cast upon the result of much expense, toil, and un-

ceasing and persevering labour. The effect may have a two-fold injurious tendency,—it may deter a future philanthropist from making a testamentary disposition, lest his bequest should be perverted to some other purpose than the one contemplated; and it may prevent the practical inventor from directing his labour to a channel the most useful to humanity. In any case, I deem it not wise to circumvent any one of his just reward, by a hard and illiberal construction. Under such impression, I earnestly hope the benevolent bequest of Dr. Fothergill will not be allowed to be perverted; which, by a reference to the "Morning Herald" of the 4th of January last, reporting the proceedings of a general meeting of the Directors of the Royal Humane Society on the previous day, stated to be their intention; from "some legal difficulties as to the construction of the will having occurred." "Forbid it Heaven!" and I earnestly hope that some influential distinguished personage, will not only demand some early adjudication, and also the accumulated interest on the 500*l.* to be brought to account; which sum they received twenty-five years since; and there can be no reasonable cause why the concerns of the Society, from the intentions of the Brethren, should not be investigated, as well as all others established for charitable purposes are.

ROCKETS.

As the application of Rockets for effecting a communication with stranded vessels, has excited much attention and claims to authorship, I consider it proper to submit my opinion of them in a letter addressed to the late Sir Wm. Congreve, requesting his leave to apply them for such purpose; which, had he permitted them to be used by me, should have been applied on an entirely new principle—which I leave for others to find out, and encourage their endeavours to render them superior to the mortar, if they can.

"Oxford Coffee House, Strand, Jan. 7th, 1815.

"Sir—I request the favour that you will permit me to try with what probability of success a rope, attached to one of your rockets might be conveyed over a vessel stranded on a lee shore; I am led to

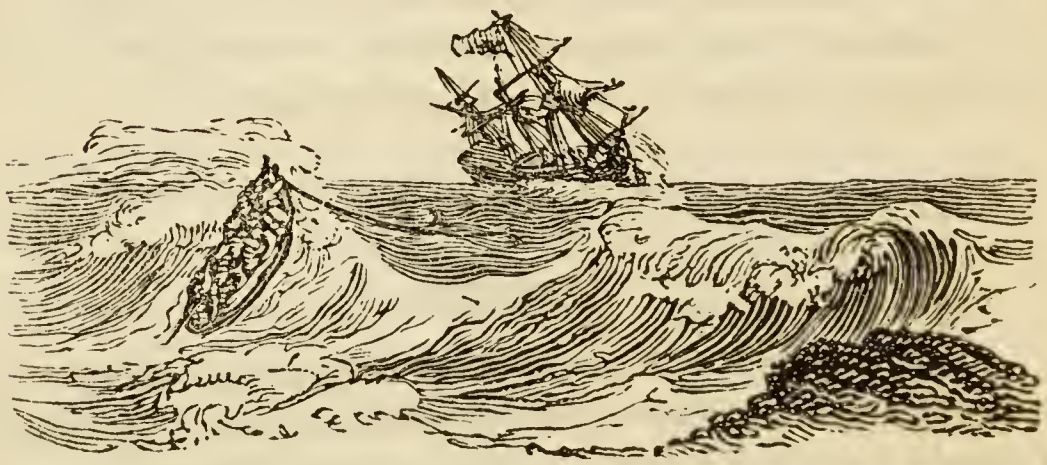
make this request in consequence of a publication that was in October last forwarded to me from Scotland, in which the probability of gaining communication by a rocket of large dimensions was suggested. My hopes that you will favour me by your compliance are, because I cannot help thinking that the means of communication may, in many instances, be more readily gained by a rocket than by a shot projected from a mortar; and because I trust your benevolence will be happy that an instrument which has been so destructive during war may, now we are likely to have no enemies but the elements, be turned to the preservation of life during peace.

" I have the honour to be, Sir,

" Your very humble servant,

" G. W. MANBY.

" To Colonel Sir Wm. Congreve, &c. &c."



ADDRESS

READ TO THE

COUNCIL OF ADMINISTRATION

OF THE

SOCIETY OF ALL NATIONS,

FOR THE

SAVING THE LIVES OF SHIPWRECKED PERSONS AND PROPERTY,

AT THEIR OFFICE,

NO. 16, PLACE VENDOME, PARIS,

ON SEPTEMBER 16th, 1836.

MR. PRESIDENT AND GENTLEMEN,

" It gives me infinite satisfaction to be personally acquainted with you, and for which express purpose I have obtained leave from the department to which I have the honour to belong (the Ordnance) at my advanced age, to lay before you all the information which it is in my power to collect, relative to the great objects which your Society, as well as myself, have so warmly at heart.

" It may be proper first to state, that for upwards of thirty years I have devoted my unwearied attention to the saving of lives and property from shipwreck, and for which pursuit I was honoured in my own country, on the founding of the Royal National Institution, by the Chairman (the late Archbishop of Canterbury) with the designa-

tion of the ' Father of the Plan for Saving Lives from Shipwreck.' It has also obtained for me honorary marks of distinction from various crowned heads, ' for having saved the lives of their subjects, and the services rendered by me generally to humanity.' Permit me next to inform you, that I have brought with me a set of apparatus, invented by me for practically illustrating the method employed in saving persons from stranded vessels, (by which means, it is with pride I state, the lives of many hundreds of sailors have been preserved), in the anxious hope of it being introduced as a branch of scientific education in France, and it receiving the patronage of its Government, and induce them to furnish similar implements (as it is in England) to the dangerous parts of its coast.

" Gentlemen—From the correspondence that have passed between your society and myself, I venture to think that I do not come before you unknown or unheard of, and will, I trust, be a sufficient apology for my informing you what is the great object I have in coming to Paris—that of submitting to you certain communications which I consider important to your society, and using my best endeavours to bring about, if possible, a union of cordial co-operation between the Societe Generale des Naufrages, established in this country. and the Institution established in England for the same beneficent purpose, as each are based upon similar philanthropic views, and if such a desirable union can be effected, which I do not doubt, I am convinced that the good that will result from it will be incalculable, by the relief it will afford to our suffering fellow-creatures, as well as the great security it will give to property now exposed to the dangers of shipwreck. Perhaps there never was a moment more propitious for this desirable union, or one more likely to serve the cause of humanity than the present; for the British Parliament having taken up the subject, and directed evidence to be taken before a select committee for investigating into the causes of shipwreck, and their suggesting such remedial recommendations as they considered would tend ' to diminish the great annual loss of life and property at sea," on which occasion I was, with several others, summoned to attend for being examined; the report of which evidences I now beg leave to lay before you, and earnestly as well as devoutly entreat your most serious attention to its contents, especially as the chairman, on bringing up that report gave

notice 'That early next session he would move to bring in a Bill on the report of the select committee on shipwreck.' To that report your attention must be particularly directed, to the indispensable and astounding fact of the loss of property, to the enormous extent of THREE MILLIONS STERLING ANNUALLY, together with the loss of SOME HUNDREDS of our fellow-creatures, chiefly caused, I am sorry to observe, from the want of due precautions; and this is the more to be lamented, as it is clearly shown that these precautions are within the sphere of human prevention, and which, had they been taken ages ago, few of the painful shipwrecks that occur upon our coasts would still spread their extensive devastation of life and property. But, praise to the British Parliament, I believe I may safely say they have now earnestly turned their attention to the subject, and which I trust its Government will unite in giving it their most serious consideration as a matter of duty as well as that of great national policy. In such important service being effected, happy will it make me, and happy will it make every friend of humanity, to find the present enlightened French nation seconding and co-operating in this great work of philanthrophy. The coasts of France are equally destructive to navigation as those of England, and there are equal advantages for making HARBOURS OF REFUGE, a step worthy of primary consideration, for affording security to shipping in stress of weather, and next giving their attention to supplying the dangerous part of the coast with the means of rescue when the unfortunate mariner is driven on shore, and further arrangements for providing warm clothing to the perishing sailor after he is saved, and assisting him to his home. To effect these objects I know of none so well calculated as through the active and prompt exertions of the Societe des Naufrages, soliciting the countenance and generous aid of his Majesty the King of the French, and obtaining from the Government of the country their approbation and cordial co-operation, so important to these two great maritime nations.

"Gentlemen—I consider the union of all nations, proposed like the Societe Generale des Naufrages, a project most creditable and praiseworthy to its projectors and supporters, as well as honourable to the nation that suggested it; it is GRAND in design, and if conducted upon sound principles, must have a NOBLE and successful result, worthy the thanks of every country. In furtherance of your desirable object, as

you have done me the distinguished honour of nominating me Director-General of the British Section, I have consequently felt it incumbent personally to state representations made to me as obstacles which impedes its success in France, and the co-operation in my own country, and in doing so, merely to state what facts are in my possession, for you to act as you may think proper.

" It is also necessary for me to state, that on the Society having requested me to allow the adoption of my plans for the purposes of your Institution, such request I was most happy to comply with, and with a view to its universal promulgation, and carrying the object into immediate effect, have, at considerable expense, drawn up a code of instructions, caused them to be translated into the French language, and to be extensively circulated, besides five hundred copies I now present you with for the use of your Society, and in which you will please to observe that I respectfully presumed to dedicate to your Sovereign, not only from the warm interest his Majesty is so well known to take in whatever relates to alleviating human distress, and as the most certain means to obtain general confidence, and best calculated to ensure public approbation and support.

" I must now, Mr. President and Gentlemen, call your attention to a subject that would, on any other occasion, have given me much pain, and would have required the extremest delicacy, but when I consider that it involves not only the reputation of your Society, and materially affects its interests, nay, on which, probably, its very existence depends. It is a duty which I owe to you for the honourable position in which you have placed me, and is also due to myself from the deep interest I have so long taken in the subject, to faithfully and fearlessly discharge it, by informing you of the unfavourable impression and great dissatisfaction that prevails in consequence of the unofficial and irregular manner your financial and secretarial departments has been conducted. I allude, Gentlemen, to the finances, that I am given to understand, are kept under the controul and in the hands of one individual, which is certainly improper.

" It is a generally received opinion with the public that whenever this is the case, no matter how high the character of that individual may stand for rectitude, still the public feeling will be always against such a confidence. As to the inefficient and irregular part

alluded to, I have merely to state that complaints of this nature have reached my ears in a very unfavourable way, and, therefore, to the knowledge of these facts I have materially ascribed the great impediments my progress, and difficulties to which I have been exposed in procuring the assistance I had contemplated from various humane persons in England, to whom I have applied, and who have declined receiving the diplomas of the society, which you furnished to me for being delivered ,o contributors, and I must not conceal the severe reflections that have been cast on the character of the Secretary-General in the British papers, representations that have tended not a little to injure the reputation of your Society.

" I am not acquainted with the Secretary-General, and therefore trust that he will, as well as every other member of the Society, believe, and which I beg to assure them is the case, that in making these statements and observations, that I am only actuated by the most disinterested views for the benefit of such an excellent, and, if properly conducted, admirable an institution; and I do hope that such steps will be taken by the present meeting that shall remove all the inconveniences under which the Society now labours, in order that it shall be ultimately and permanently successful.

" Permit me, lastly, Gentlemen, to observe that, unless such changes and alterations are made in the administration of the Society's affairs as will entitle it to claims of co-operation in England, I shall be obliged, although most reluctantly, to decline being any longer a member; at the same time allow me to assure you, that I shall be most ready and willing to use my unwearied endeavours and best exertions to preserve and rescue from decay an association in aid of a cause so especially important to the maritime world, and so deeply interesting to humanity.

" G. W. MANBY, Captain, F.R.S.,

" President of the British Section for Saving Lives from Shipwreck."

On showing the Address to Mr. Galignani he inserted the following in his *Messenger* on the 10th of October, and I trust it may be here introduced without drawing upon me any imputation of vanity :—

" Captain Manby, to whose able and ingenious plans for the preservation of life and property, in cases of shipwreck, humanity owes so much, at a recent meeting of the Société Générale des Naufrages, explained the advantages which would result from a union between this Association and the National Institution established in England for the same purpose. The gallant Captain alluded to the appalling fact given in the report of the late Parliamentary Committee on Shipwrecks, that hundreds of lives, and not less than three millions of property were annually lost, chiefly by a want of due precautions. He earnestly urged the necessity of forming harbours of refuge on the coast of France as places of security to shipping in stress of weather, and recommended the supplying the dangerous points with the means of rescue when vessels are driven on shore, with other arrangements, calculated to assist in the preservation of the sufferers. Plans of his apparatus, and the instructions drawn up by the Captain having been requested by the Society, he placed both at their disposal, gratified at its being the means of still further making known and increasing the utility of the philanthropic labours to which he has for thirty years devoted himself. The exertions of this venerable labourer in the cause of humanity have been honourably noticed by several of the crowned heads of Europe, in return for the lives of their subjects preserved by means of his invention ; and it is expected that his Majesty, who takes a warm interest in a plan which promises to be so highly useful to the marine will acknowledge his sense of Captain Manby's services by conferring on him the Order of the Legion of Honour."

From an anxiety to establish a mutual international arrangement for the protection of life and property, on whatever shore the misfortune of shipwreck may happen, and in the earnest hope it might lead to other compassionate engagements with foreign nations, the following memorial was placed in the hands of his Excellency Marshal Soult, the Duke of Dalmatia, accompanied with a request that he would present the same to his Sovereign, on his return to France :—

"TO HIS MOST EXCELLENT MAJESTY LOUIS PHILLIPPE, KING OF THE FRENCH, &c., &c.

"The memorial of George William Manby, Captain, Barrack Master of Yarmouth, in Norfolk, &c., most humbly and respectfully showeth,

"That your memorialist, from his having devoted upwards of thirty years to the preservation of lives, and averting the distress so often attendant and fatal, on the occurrence of shipwreck, has been selected and honoured with a diploma, appointing him President of the British Section of the Institution which your Majesty has benevolently taken under your protection, for the preservation of life and property from shipwreck.

"That your memorialist has, by his inventions for the objects already stated, been instrumental to the saving the lives of several hundreds of sailors and persons who were shipwrecked on the shores of Great Britain, many of whom were subjects of foreign countries, and some were natives of France.

"That your memorialist, from his often observing the statements of great loss of life by shipwreck on the coast of France and other foreign nations, was induced, from an anxious desire as well as a duty he felt imposed on him by the distinguished appointment conferred on him to use his best endeavour to diminish the loss of life and property at sea, by promulgating the methods he had successfully brought into practice in this county for those especial objects.

"That your memorialist has for such purpose compiled a code of instructions, and caused them to be translated into the French Lan-

guage, as most universally known, dedicating the same to your Majesty; a copy of which he has now the honour to solicit his Excellency Marshal Soult, the Duke of Dalmatia, to present to your Majesty.

" That your memorialist has also procured an extensive distribution of that work, entirely at his own expense, at Toulon, L'Orient, Bayonne, Boulogne, Gravelines, Calais, L'Ile Dieu, Nice, Genoa, Trieste, Algiers, Bilboa, Cadiz, Antwerp, Anvers, Ostend, Amsterdam, Nantes, &c.

" That your memorialist begs leave to express an anxious desire to extend his further endeavours in the cause of humanity; he therefore most urgently implores your Majesty to sanction, patronize, and encourage an arrangement for an international negotiation with the maritime nations of the world, to unite in a comprehensive treaty of mutual alliance for the preservation of life, and the protection of property for the rightful owners, on whatever shore the misfortunes of shipwreck may take place, also for providing warm clothing and temporary comfort to the sailor after he is saved, and for assisting him to his home, to whatever country he may belong.

" Your memorialist, lastly, takes leave to state, that our gracious and much-beloved Sovereign Queen Victoria the First, has honoured him with an assurance that her Majesty takes 'the warmest interest in whatever relates to the saving the lives of sailors;' and he also begs to add, that he has likewise received an assurance from the British Government of their readiness to co-operate in any measure important to the interests of humanity, and especially to objects tending to diminish the loss of life and property at sea.

GEORGE Wm. MANBY, Captain,

President of the British Section of the Société Générale des Naufrages, for the Interests of all Nations; Hon. Member of the Société des Sciences, Physiques, Chemiques et Arts, Agricoles de France, &c. &c.

SUGGESTIONS

FOR THE

FORMATION OF AN ASSOCIATION,

TO

DIMINISH THE LOSS OF PROPERTY AT SEA,

AND FOR

AFFORDING PROTECTION TO VESSELS

NAVIGATING THE EASTERN COAST OF THIS KINGDOM,

BETWEEN THE

PORT OF HARWICH AND THE HUMBER,

BY PROVIDING

EFFECTUAL AND POWERFUL ASSISTANCE

TO

STRANDED, WATER-LOGGED, OR SINKING VESSELS,

AND BY SECURING THE PROPERTY ON BOARD THEM FROM PLUNDER, FOR THE BENEFIT OF THE RIGHTFUL OWNERS AND UNDERWRITERS; ALSO, FOR THE RECOVERY OF PROPERTY IN FOUNDERED VESSELS, AND FOR WEIGHING THE HULLS OF THOSE THAT ARE SUNKEN.

When it is considered the immense fleets of shipping that pass and repass that line of coast in the coal trade alone, and the extraordinary peculiarities and dangers in that tract of navigation, arising from numerous perpetually fluctuating shoals, extensive sand-banks, uncertain

from their capricious shiftings, in the vicinity of Norfolk and Suffolk, and singular flatness of shore of Lincolnshire, that have tended so often to baffle experienced mariners, especially in thick weather, it excites no wonder why this single part of the North Sea should be more notorious for shipwreck, more dangerous to navigation, and more fatal for the loss of life and property than perhaps all the other coasts of the kingdom collectively; and although a protection to life is systematically organized along such line of coast, yet a like protection to property has hitherto been overlooked, but is indispensably required, from the fact that, not two years since, no less than fifty sail were in one gale driven on shore, some of these totally lost for want of early assistance in getting them off, and some sunk and still remain in the channel from want of sufficient and adequate arrangements to provide the apparatus necessary for the purpose of immediate relief, and saving such property; circumstances to convince every thinking mind of the imperious necessity of some organized system for the better protection of the shipping interest than at present exists, not only to those afloat, but to the recovery of cargoes in foundered vessels before they are much damaged or destroyed by sea water, and for weighing the foundered vessels to prevent their entire loss. That these are subjects worthy of attentive consideration is proved by the following authenticated statement:—"That the whole loss of property in British shipping, wrecked or foundered, amounts to nearly THREE MILLIONS sterling annually, the value of which property, though covered by insurances to certain parties, is not the less absolute loss to the nation; and its cost paid for by the British public, on whom its loss must ultimately fall." The importance of such an association to the shipping interest will also be great, from vesting proper power to an authorized and responsible body, to take possession of all stranded ships and goods, and awarding compensation to lords of manors, instead of leaving them, as at present is the case, since the ABOLITION of the Local Admiralty Courts, under the direction of an agent of the Deputy Vice-Admiral of the County, into whose hands they now fall, whose charges cannot be disputed before delivering up the goods, and against which charges there is no appeal. Another great national service will be attained by clearing the channel from obstructions now

injurious to navigation, and extremely dangerous to both life and property, with many other important benefits.

In respectfully submitting these observations in support of the plan proposed, I must solicit public attention to the " Parliamentary Report of the Select Committee appointed to inquire into the causes of shipwreck, printed by order of the House of Commons, on the 15th of August, 1836." In this the following statement was made by myself, on the 19th of July, when the committee, after having obtained from me information as to the means practically brought into use for saving persons from stranded vessels, the methods employed for the prevention of shipwreck, the arrangements made for carrying the same into effect, in whose charge the implements and life apparatus for those services are entrusted, and particularly as to the success that had resulted from those productions. The chairman further required information, " If I could not point out some measure especially adapted to diminish the loss of property at sea, and saving of property from shipwreck?" My reply was, " I have a plan that I feel confident will diminish such losses; but I must decline giving it at present, as you have a great number of persons to be examined, and I do not wish others turning to their own advantage, and taking credit to themselves what has emanated from myself, and to which my labour is justly entitled (a suspicion since confirmed); but I will, on some future occasion, detail my plan, from a desire to make it available, if possible, to the benevolent and patriotic object for which the committee is appointed." This was accordingly done on the 4th of August (see Minutes of Evidence) by a prospectus delivered in for the forming of an association for the objects and purposes already named.

Amongst the arrangements submitted was that of a steam-vessel of sufficient power and particular construction, to draw little water, for going over shoals and passing through broken water with the least danger, fitted with every necessary apparatus, especially that of powerful hydraulic engines, to be worked by steam, to apply to pumps for relieving water-logged vessels; such steamer to be ready to immediately proceed and effect communication with, and tug off any stranded vessel, or to a sunken vessel, for the expeditious recovery of the pro-

perty on board it, and for weighing and removing the same. Also, by accompanying vessels of sufficient strength, adapted for using powerful mechanical purchases. The aid of the most experienced divers, with sets of diving apparatus and forcing-pumps to supply fresh air for any time required, and every implement necessary for fishing up the cargoes of wrecked vessels, and for lifting sunken vessels from their position, as well as encradling and raising them with facility and certainty.

The calculation of the value of property stranded, or of wrecked and totally lost, for want of some similar organized and well-arranged plan, is impossible to be ascertained; but when it is a well-authenticated fact, that no less than some thousands of pounds sterling was actually paid for labour alone, for services performed to the vessels stranded on Yarmouth beach, after the gale in December, 1836, it cannot be doubted but there will accrue, not only a fair but a handsome remuneration to shareholders in such an association, established at the port of Yarmouth—a place particularly suited to the purpose from its central situation. The shareholders, too, will have the comfort of knowing that, in securing their private interest, they are promoting the public good, and are forwarding the great law of nature, which bids "self-love and social be the same."

ESTIMATE OF THE OUTLAY REQUIRED.

Cost of a vessel constructed as named with a fifty-horse power, with her stores and the requisites to save sinking vessels	£4,500
Total cost of two tenders of eighty tons each, properly equipped and furnished with Bramah's purchases, &c..	4,000
Diving apparatus, forcing air pumps, and all necessary implements for the recovery of property	500
	£9,000

The capital to be £10,000 in £50 shares.

The undertaking is proposed to be incorporated by Royal charter, with permission to extend its powers and limits as it may be required; conducted on the most honourable principles, for the best interest of shipowners, underwriters, and shareholders, and the management to

be vested in directors, selected from subscribers qualified by respectability of character, and ability to discharge the duties and exert themselves to promote the prosperity of a design of so much national and individual importance.

G. W. MANBY, F.R.S.,

Captain, Barrack Master of Yarmouth; Author of the Means of Saving Shipwrecked Mariners; President of the British Section of the Société Générale des Naufrages, established in Paris for the Interest of all Nations; Hon. Member of the Société des Sciences et Arts, Agricoles et Industriels de France, &c. &c.

Yarmouth, Sept. 29, 1838.

ON THE

EXTINCTION AND PREVENTION

OF

DESTRUCTIVE FIRES,

AND THE

RESCUING OF PERSONS

FROM

HOUSES ENVELOPED IN FLAMES.

ON THE

PREVENTION OF DESTRUCTIVE FIRES,

ETC. ETC.

Although the preservation of life from fire had for a long time occupied some part of my attention, it was not till after witnessing a very awful conflagration in Edinburgh, in January, 1813, and after reflecting on the strange confusion which is invariably attendant on fires, from the want of some established, well-digested, systematic plan, that I began more particularly to direct my thoughts to the subject: convinced of the necessity of laying down some general rules, in conjunction with the requisite apparatus, for the purpose I had in view; much after the order I had already adopted for saving the lives of shipwrecked mariners.

The fire to which I allude was raging in the fifth floor, or flat, of a lofty building; and, in consequence of the difficulty of procuring an early supply of water, of its scarcity when obtained, and of the height of the building, by which the use of the engines was rendered of little avail, the fire rapidly increased. Owing to the intricacy of the situation, which rendered access difficult, and, when attained, not being within reach of manual exertion for the ready application of water on the part that was burning, the flames at last raged with unchecked fury.

On my return from Scotland, I stated these circumstances to the

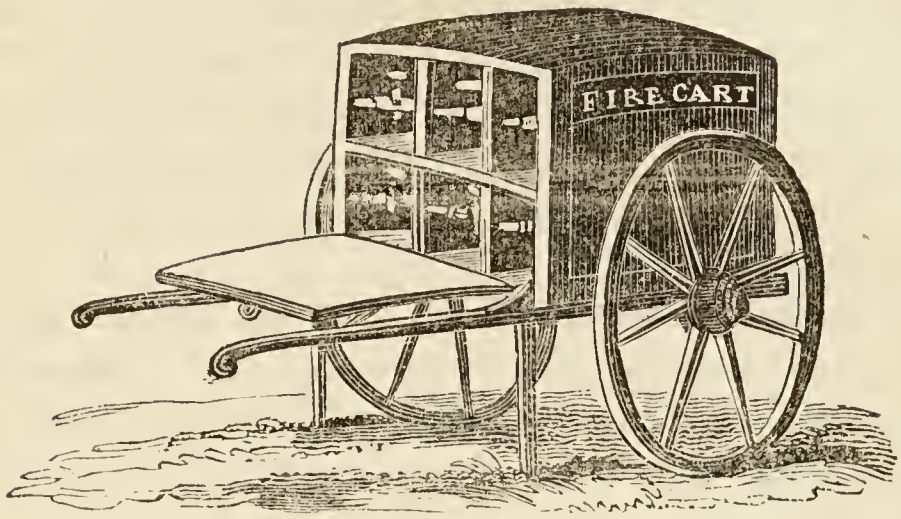
late Right Hon. George Rose, that true friend and patron of every good design. He urged me to apply myself to the production of some means for obviating the evils represented, and to the construction of apparatus, &c., for preventing a recurrence of similar disasters. Thus encouraged, after deep consideration, it occurred to me that nothing could be so equably adopted for instant application as condensed air, acting on the surface of a fluid so as to jet a stream of water, at pleasure, on any part of a building where fire existed. This appeared to me in every way adequate to the purpose, as it was capable of being rendered extremely portable, and, consequently, easy of conveyance to any spot that might be in flames, however difficult of access or remote the situation.

Although emboldened by the promise of success, a difficulty arose, that only a small portion could be thus conveyed; yet I felt fully persuaded, that the application of even a small portion of water at a critical moment would often effect what, at a later period, a much larger power of water could not accomplish. I accordingly prepared a model of my invention, and showed it to Mr. Rose, whose approbation was accompanied with a recommendation of it to Lord Sidmouth, then Secretary of State for the Home Department. With it I also submitted other designs for the saving of lives from houses on fire, by elastic safety-sheets, for the preservation of persons who might leap from windows, parapets, or battlements, and which were suggested by me as proper to accompany every fire-engine:—all these met with his Lordship's approbation. I will now enter upon the remedial part of my plan for extinguishing Incipient Fires, with a description of the apparatus proposed for that object, and a detailed progressive account of my subsequent proceedings.

It was early in the spring of 1816, an experiment was tried by me in London, at the express wish of some persons who had taken a favourable view of my plan and its practicability.

My apparatus was as follows:—A portable chest, containing charged cylindrical engines or vessels, and reservoirs, also filled with the solution of an ingredient calculated to extinguish fire immediately on being cast upon it—the fluid, or solution, not being liable to freeze, and possessing, at the same time, the property of preventing the re-ignition of whatever it had once extinguished.

Finding a chest inconvenient, I conveyed the above apparatus in a cart, so light that a person can wheel it with rapidity to the required



spot. The vessels, too, combine the means of projecting the fluid with force at pleasure; are portable, and, when slung across the shoulders, may be carried up a ladder, or to any part of the building on fire, however difficult of access. The design of this apparatus, charged as above with the Antiphlogistic FIuid, was to keep up a constant play, so as, if early applied, to subdue the fire, or, at least, check its progress, until the arrival of the regular engines.

An account of this experiment having been reported in the public journals, and commented on with reference to the importance of such an apparatus on board of SHIPS for the extinction of fire in situations below, where water is not easy of conveyance, and still more difficult of application, I was applied to by the Minister of the French marine, through the medium of Baron SEGUIER, the Consul-General of that nation, then residing in London, requesting me to explain the nature of my invention.

My ready communication of the plan, and equal willingness, in accordance with the request, to make experiments for illustrating its efficacy before the Marquis d'Osmond, the Ambassador of this country, obtained for me not only the thanks of that Minister, but those of the French marine.

In this country, the admirers of my plan, in the confidence of its utility, urged me to apply to the Board of Ordnance for leave to make an experiment at Woolwich, on an extended scale, to bring to a practical bearing the particular fitness of the apparatus, &c., for extinguishing fire on board of SHIPS in DOCK-YARDS, and in STORE-HOUSES.

In asking for this permission, I stated, that my design was to exhibit the feasibility of my scheme, and its efficiency in extinguishing INCIPIENT FIRES on their first discovery, which would be within the compass of the apparatus; or, provided the conflagration had already extended beyond that limit, to check its progress, until the arrival of more powerful assistance.

My request was readily granted, and the experiment took place at the practice-ground on the 24th of March, 1817, upon a wooden building erected for the purpose, by the side of the moat. This building, was filled with bavins, broken tar-barrels, and other combustibles, resting upon rafters, about four feet from the ground.

The experiment excited considerable interest, particularly among those at whose instigation I consented to perform it; and many persons attended to witness the result.

Let it be borne in mind, that a fire, however combustible the material, commences only in one particular spot; and thus, for some time existing but locally, it may, consequently, by prompt application, be checked, or quite extinguished; but, in firing the contents of the building in this instance, so greatly was the whole previous arrangement departed from, by several men with port-fires setting fire to every

part under the rafters, that the whole, in an instant, was in such a raging state of combustion, as to bid defiance to the most powerful engine. Indeed, many of the by-standers, to express their dissatisfaction at my apparent extravagance, advised me to abandon my project. Yet, disregarding the wishes of my friends, I persevered, and, to show the correctness of my expectation, I present the following extract from the Report drawn up on the occasion, by a Committee of Colonels and Field Officers of the Royal Artillery :—

> "The flames were uniformly extinguished where the liquid could be applied; and the wood did not appear capable of being readily re-inaflmed*."

In the year 1821 an alarming fire took place in the metropolis, which, from the delay of the engines getting to the spot, the time lost before they were brought to play, from the scarcity of water, and other circumstances—became frightfully destructive.

The accounts of this, as collected from the periodical press, determined me on calling the attention of the public to my newly-invented method of arresting the progress of incipient fires, or of subduing them altogether. Accordingly, in the following year (1822), I put the public in full possession of my plans, through the medium of the "Gentleman's Magazine," with an exposition of the apparatus, and a specification of a proposed organized arrangement, with remarks on the necessity of a better security against fire.

Independently of this communication I also submitted, at the same time, my plans to several individuals, whose stations in society and the metropolis, would command respect. I likewise laid them before the directors and trustees of several of the Fire Insurance Offices in Lon-

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* I have since ascertained, that by this, and other experiments, made by myself, for the extinguishment of fire by this means, a great prejudice and opposition have been excited, from the erroneous supposition that my object was to supersede fire-engines---an intention I entirely disclaim---my wish being to make the former an appendage, or auxiliary to the latter, considering it an object of the greatest public interest, owing to its *readiness of application*, before the common fire-engines can be brought to act.

don, disclaiming all personal advantage, being actuated by no other feeling than an anxious desire to prevent a calamity which so invariably involved many of the sufferers in distress, and too often in poverty.

On the appointment of a Committee of the House of Commons, in 1823, to take into consideration the Improvement of the Police of the Metropolis, I expressed a wish to be examined before it; observing that the guarding against fire and the extinguishing of it, at its first breaking out, must be matter of great moment to the Police of the Metropolis; and, that the plan I was ready to submit to them would, I had no doubt, be adequate to effect such object; requesting, at the same time, the Chairman, now the Right Hon. Sir Robert Peel, to lay the following letter before the Committee, which favour he most kindly granted:—

"Sir—The public at large must be greatly interested in every circumstance that has for its object to lessen, if not prevent destructive fires. I am, therefore, respectfully induced to submit some observations and suggestions to avert a calamity that seldom occurs without considerable loss of property, often with the loss of life, and never without great inconvenience and distress to the suffering individuals. I must beg leave to observe, that the extinguishing of fires is, at present, exclusively in the hands of the different Insurance Companies, whose arrangements, as far as they extend, are unquestionably excellent, but certainly do not afford a sufficient protection to the public; as it is too well known that, notwithstanding the arrangements made by them—from not having the means immediately to oppose the flames—the fire often rapidly increases to such fury, that the firemen, upon a principle of safety, pull down the contiguous houses to prevent an extension of its ravages, rather than attempt to save that in which the flames first broke out.

"It is obvious that every fire, whether detected at its commencement, or when far and wide extended, must arise from small beginnings; and, that every such fire, when discovered in an incipient stage, is easily extinguished, or certainly kept down; and, thereby, prevented from becoming extensive by an instant application of water, on the self-evident axiom, 'That a small quantity of water, early supplied and

well directed, will accomplish what probably no quantity could effect at a later period.'

"I have had the fact confirmed to me, that fires generally become destructive from the long period of time or interval that unavoidably occurs between the discovery or alarm given, and the assembling of the firemen, the arrival of the engines, the procuring of water, its full supply, and getting the engines into full and vigorous action. It is also a fact, that it sometimes proceeds to an almost boundless extent from a scarcity or total want of water, as in severe frosts; and sometimes from breaking out in situations difficult of approach, and out of reach of the engines; thus rendering the common means of extinguishment very difficult, if not altogether impossible of application, and certainly not without considerable delay.

"From the minutes of evidence, taken before a Committee of the House of Commons, in 1816, on the state of the police of the metropolis, it is there shown, 'that sometimes it is nearly half an hour before the arrival of the engines;'—'sometimes a long space of time elapses before water can be found, or a sufficient supply obtained to effect an immediate extinction;'—'that property to the amount of upwards of 100,000*l.* is annually destroyed, as well as several lives lost by fire in the metropolis;' and that 'half the serious and extensive fires are occasioned by incendiaries.' The same minutes also set forth the following suggestions:—'that a Fire Police would be the most effective security and provision against fire, and the accidents attendant thereon; and if they were furnished with expedients, similar to the plan of Captain Manby, would be most successfuly employed for saving lives and property, and beneficial in detecting and checking the numerous crimes that occur at fires.'

"The adoption of a Fire Police, if furnished with fire-carts, and the necessary apparatus, would, by possessing these means of instant application, leave no doubt on my mind, that important benefits would accrue to all classes of the community. To the Insurance Companies it would often be an immense saving, by preventing the destruction of property insured at their offices. To the public it would afford a much greater security than they at present possess, and supply what they stand in need of; viz. a more efficacious protection to their lives and personal safety. It would also furnish a means for the preservation of

papers, important documents, pictures, paintings, and property of such description as cannot be insured, and which no pecuniary remuneration could replace; still further, from the promptness with which it may be used, and its ready application, it would materially serve to detect the crime of arson, and defeat the malignant attempt at revenge on the part of the incendiary."

On the re-appointment of the Committee in the following year, I was informed that its members were to meet solely for the purpose of drawing up the report of their proceedings during the former session. On hearing this my hopes ceased. I shall therefore now state the object contemplated by myself in wishing to be examined before a branch of the Legislature. In this I was influenced by more than one reason; by submitting myself to the scrutiny of a public body I was the more likely to draw public attention to the subject; and as it is one which deeply interests every individual of the metropolis, as well as all who reside or have property in large and populous places, I deemed this the most effective step to arouse the feelings of all classes of the community to it.

The outline I am now going to offer will contain a summary of the evils and imperfections of the existing method, and the improved system which I had in view, as a remedy for that which is universally acknowledged as susceptible, at least, of amendment.

In bringing the subject then before the Committee, my design was to class my observations under the two following heads, viz.:—

THE PREVENTION OF DESTRUCTIVE FIRES, and the
RESCUING OF PERSONS FROM HOUSES IN FLAMES.

It was my intention to have pointed out that the general arrangements respecting the extinction of fire, were exclusively in the hands of the different Fire Offices, with the exception of the parochial establishments, settled by Acts of Parliament; and that the only protection afforded to the public, by both or either, was by the fire-engines. I should, as my first object, have called the attention of the Committee to the fact, "that fires generally make great progress, and often become very destructive, from the interval that unavoidably occurs

between the first alarm, and that of the engines getting into full action; sometimes from breaking out in situations difficult of access, and their not being discovered in an incipient state, as when they commence in the cellars of large warehouses, public buildings, &c."*

I should have stated, what had fallen under my own experience at Edinburgh, that it often happens that we cannot get sufficiently near to the part to be able to project that quantity of water which, in the earlier stage of the fire, would prove sufficient for the entire extinction of it, even though such water might be brought by hand. In such case, it is evident, that if we bring into action but a small quantity, we should, doubtless, succeed either in subduing the fire or in arresting its progress until larger supplies were brought into action; and here it is not necessary to proceed with my recapitulation in support of the truth of these statements, the Committee of the House of Commons of 1816 having said all, and more than I deem requisite, to confirm the inefficiency of the mode now in use.

I had indeed further intended to lay before the Committee an authenticated list of extensively destructive fires; distinguishing such as were known to have become so from the want of some more efficient and prompt counteraction to the extension of fire, than the present system by engines only, can possibly admit of; and then to submit, whether the public have not a fair right to expect, and a just claim to demand, from the Fire Offices, a better security against the distresses consequent on fires, than is at present afforded to them.

I should then have submitted my plan, by fire-carts, for furthering such desirable objects, illustrating the same by models, confirming their utility by their instant application, showing how a continued stream of water can be projected in any given or precise direction; the distance

* Upon the system of "prevention being better than cure," and it being notorious, that many serious accidents occur from the neglect of open fires in rooms whence the inhabitants have absented themselves, it is considered right to call the reader's attention to the very ingenious system of Warming and Ventilating, by means of air warmed by passing between vessels filled with hot water. This system, invented by Messrs. H. C. Price and Co., of Bristol, and of No. 9, John-street, Adelphi, London, is, for its salubrity, safety, simplicity, and economy, superior to any other at present in use, and its extensive employment by the principal architects of the day, attests its merits.

such a stream could be propelled by the elastic force of condensed air; and, lastly, the extinguishing properties of the solution or fluid proposed to be substituted for common water.

I should also have exhibited the models and plan for a CAR, conveying APPARATUS for the rescue of persons in danger, with its accompanying RESERVOIR (requiring only the power of one man to move it from place to place), containing a further supply of water properly impregnated with the antiphlogistic matter recommended, with a portable hand-engine, possessing great power of projecting the solution, and, from its make, capable of speedy adjustment.

In proof of the advantage that would be derived from the use of the FIRE-CARTS, occupying the interval of time before spoken of, I should have detailed the following experiment made by myself some few years since:—Having selected twelve experienced and active men, I arranged them at the barrack fire-engine, ready to start for a certain spot selected by myself beforehand, where water was ready for the use of the engine. By the side of the engine I placed a fire-cart, containing six vessels already charged with the solution, under the charge and conveyance of only one man. Both parties started at one and the same time; the distance of the spot I had fixed upon was 125 yards. Though the fire-engine required only to have its suction-pipe attached for immediately obtaining water, yet it could not be got into action for upwards of eighteen minutes from the time of starting, and even then could not act upon the part of the building supposed to be in flames, from its height, intricacy, and difficulty of approach.

The person, however, in charge of the fire-cart was seen by numerous persons on the top of the lofty building, actually applying the contents of one of his vessels from the cart, in less than TWO minutes from the time of his starting.

It should, however, be remembered that this experiment took place during day, with the men all arranged at the drag-ropes in readiness for starting; whereas, in actual service—particularly in the dead of night—the usual circumstance and consequent delay for the men assembling, would have very much increased this space of time, as the arrival of a single watchman would be all that is required for the conveyance and application of one fire-cart and apparatus in opposing the progress of the fire.

I should then have expressed my opinion on the utility and high importance of a regularly-established FIRE POLICE, and that such be a constituted branch of the general police, subordinate to them, but available of the aid of each other. By this regulation all jealous feeling would be obviated, while every benefit would result from their mutual co-operation and assistance; for, surely, in cases where human life or extensive property is at stake feelings of jealousy ought never to be found. An arrangement of this kind would, I feel fully persuaded, tend to the prevention of crime, since it is a fact well ascertained, that out of the first thirty persons who assemble at fires in the metropolis, twenty are there collected for the exclusive purpose of plunder, and for throwing impediments in the way of early extinction.

In the hands of such a regularly embodied fire police as I have been speaking of, the fire-carts and apparatus, considered as an appendage to the regular fire-engines, would, if so intrusted to their management and application, "eminently tend" in the approving words of the late Mr. Fielding, when expressing his opinion to a Committee of the House of Commons, in 1816, "to be such an effective means of security from fire, that the public would be highly pleased with such an establishment."

It was my intention also to have submitted an estimate of the expense for furnishing the necessary quantity of fire-carts requisite for the better protection of the metropolis; viz. 200 at 25*l.* each, which would amount to 5,000*l.*; but, perhaps, for such a number a contract might be made at 20*l.* each. The number of reservoir cars required, namely, 100, with their appendages, at 30*l.* each, would amount to 3,000*l.* With such a number of fire-carts and fire-cars, placed under the immediate superintendence of a well-organized police, in conjunction with the regular fire-engines, would close my ideas for the PREVENTION OF FIRE, and the RESCUING OF PERSONS FROM HOUSES IN FLAMES.

Nor can it be too often repeated that there exists, at present, no organized system for rescuing persons from a house on fire,*—a situa-

* Since this statement was made a SOCIETY FOR THE PROTECTION OF LIFE FROM FIRE has been established, and which I trust will receive the fullest encouragement from the public to carry into effect the laudable intention proposed.

tion horrible and agonizing both to the victim and to those who are at present sometimes compelled to be merely passive spectators. In furtherence, then, of the cause of humanity, I should, lastly, have laid before the Committee the number of persons who had of late been burnt to death in houses on fire; distinguishing those who had perished from the want of some portable apparatus, simple in construction, of ready adjustment, and quick application, and which, when promptly brought to the spot and properly used, might either have effected their immediate rescue, or have afforded certain other means of escape. For this purpose there was to be employed the light Car already mentioned, with a complete set of apparatus adapted to different situations, the whole of which is susceptible of easy management, as already described—the cart and car to be placed in the charge of the Fire-Police, who are to be instructed in their uses. For this purpose I should have recommended a code of directions to be drawn up and generally distributed for public instruction, so that persons who might be so unfortunately situated as to have no other means of escaping, might be instructed in the manner how to act in securing the apparatus to the window frame, &c., by which to descend, or obtain that assistance necessary to save the lives of those whose mental fortitude might not be equal to the undertaking, or who, from sickness and infirmity, were rendered unable to provide for their own safety,—proposing head-money for every person so rescued.

I should also have pointed out that in the metropolis the loss of lives from fire is, on an average, upwards of twenty annually; many of these sufferers would most undoubtedly have been saved by some simple apparatus, such as I have pointed out.

I acknowledge that the preventive and remedial means already employed by the Fire Insurance Companies are good (as I have before said) so far as they extend; but it is within every one's experience, that these means are practically and painfully deficient for the more enlarged view which I have ventured to take of the matter. But it may be asked—Is it right to expect that so laudable an object should be made to devolve on the limited means of a few individuals?—No, certainly; the whole plan is so comprehensive, so beneficent and humane, that it can only be accomplished as a measure of Government, or by the establishment of a company chartered by Parliament;

though I am persuaded it would be rendered much more effective in the hands of Government as an appendage to, and under the management of, the New Police; and when I state, that the whole which I propose can be effected at an expense not exceeding 8,000*l.*, it is my earnest hope that, on the score of humanity, and as a wise municipal arrangement, it may not be thought undeserving of encouragement, and not too late to be carried into effect.

DETAILED DESCRIPTION OF THE APPARATUS.

In a preceding page I have only mentioned the apparatus in its immediate application; I will here enter on a fuller development of it. In its construction my principal design has been simplicity in form, size, and use; so as to be moved with little assistance to the spot required, and when there, capable of instant application, and at the least possible expense. Appended beneath the axle-tree of the car (a situation the best adapted for moving with ease and care a weight, by the centre gravity) is a double reservoir, containing the antiphlogistic fluid, which, being projected with considerable force from a hand-engine, is capable of extinguishing a large and extensive surface of inflamed material. The hand-engine is so constructed as to be capable of speedy adjustment, and put into operation in a very short time; it is accompanied with fire-buckets for conveying, and a tank from which to project, the fluid in the direction required.

The further contents of the Car are, first, a square Safety-sheet for catching such persons who, to save their lives, are driven to the alternative of leaping from the parapet or windows. It is formed of elastic girthing (such as is used for saddles), and surrounded by a rope, in the manner of a bolt-rope to a ship's sail, and thus contrived for the purpose of being extended by the people in the street. This will most assuredly catch them without injury or danger, if due attention is paid by the people below; eight individuals being sufficient to give the sheet the necessary degree of extension.

The next Safety-sheet is made of material like the first, but differs from it in make, being of a parallelogrammic form; a shape better

suited than the former, being capable of adjustment to any distance or windows where there is an area between the inner railing and the house.

The method of using it is as follows :—At the corners of the sheet are loops for hooks, which are to be secured to the inside of the window frames, an operation easily effected by means of a folding ladder, made to rest on the iron railing, and the outside sill of the window, thus forming a platform for the fireman to pass over, while, with his axe, he dashes in the corner of the window or shutter, and hooks one corner of the sheet to the inside of the window under the one (in a perpendicular line) to that where the persons are requiring assistance ; he will do the same at the window similarly situated. The side of the sheet next to the street must be extended by the people, who must guard against any injury accruing from the spikes of the railing, by giving that part of the sheet sufficient elevation ; and to give confidence to the distressed objects, and remove the dread of falling into an area, it is desirable to incline or cover that part of the sheet with a blanket, or such other material. Valuable and much perishable property, that would be destroyed by being thrown into the street might be saved and preserved whole by this means.

But should the unfortunate inmates of the house not dare to trust to this mode of preservation, I propose effecting their descent by a communication similar to the means resorted to for preserving lives from shipwreck, by projecting a line over the building from a short hand-gun of large calibre ; by this communication a line may be guided by the people below to those requiring assistance, by which they may haul up a rope-ladder, and hook it to the window-frame, parapet, or battlement top. By this means any active person may ascend to afford the requisite assistance, or such as have sufficient self-possession and strength may descend by it. This, however, is not the only way by which their descent may be rendered safe ; for, by such a communication being established, another description of apparatus may be adjusted to the window-frame, worked in a similar manner to that employed for bringing shipwrecked mariners from a stranded vessel ; and particularly adapted where there are women, children, sick, or infirm.

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* A gun for this especial purpose is placed in the United Service Museum.

COMPOSITION OF THE ANTIPHLOGISTIC FLUID.

I shall now offer a few remarks respecting common water in the extinguishing of fire, as it is at present the only resource in use for such purpose, and cannot be considered as an efficacious expedient unless there is a powerful supply. It is well known, that when a small quantity of simple water is cast on materials in a state of violent combustion, the heat from the burnt surface soon causes it to evaporate into steam, and the materials thus extinguished, again becoming dry from the radiation of surrounding heat, readily ignite. Hence, the necessity of an incombustible substance to render water more effectually extinguishing, and to prevent materials, once extinguished by it, from rekindling, is absolutely necessary.

This subject, during the last century, has engaged the experimental inquiry of many distinguished men of talent in different countries.

The addition of common pearl-ash, or the potash of commerce, to water, renders that fluid capable of extinguishing fire very efficaciously; indeed, such is its power, that it will instantly extinguish the flames, nor will the part where it wets re-ignite, or rather re-inflame; for, as the water evaporates, a solid incrustation of the pearl-ash is left on the surface, which, by defending it from the influence of the air, prevents it from burning and from communicating flame to the contiguous parts. Water, thus impregnated, constitutes what may be called an Antiphlogistic Fluid, and is capable to be rendered many times more effectually extinguishing than common water. This was confirmed by a public experiment at Stockholm in 1792. The solution used was made by several combined ingredients, and subdued an artificial fire by two men and forty measures of the prepared solution, which would have required twenty men and 1,500 of the same measures of common water. But these means appear to have been designed entirely for being cast upon the flames by hand. No attempt, however, has been made to apply such a solution by a projecting force on flames; a consideration most important where the situation and fury of the flames prevent approach.

The simple solution of pearl-ash is the one which I have used, and I consider it the best, as it never fails in extinguishing active conflagration. Thus, for instance, let us suppose a large double-bedded

room, and one of the beds on fire; if a stream of the solution is directed on the curtains of the one in flames, wherever it touches, that same material, even though it again become dry by the evaporation of the water, will NOT RE-INFLAME. It will certainly take fire, but it will only smoulder like tinder, as any one may illustrate by direct experiment. Thus, at a moderate ratio, by increasing the quality, the Cart would convey an extinguishing fluid equal to a ton of common water.

As a demonstrative proof of the efficacy of my Antiphlogistic Fluid, I illustrated, at a lecture, its extinguishing properties by direct experiment. On the one hand I showed its power of extinguishing flames—on the other, its property of rendering the material, otherwise highly combustible, incapable of burning with flame; and, finally, I contrasted it with the effect of common water, in each and all of the above instances. For this purpose I exhibited its effects on the most combustible materials to be found, as those in dock-yards, viz., hemp, oakum, cordage, and, deal-wood; and afterwards, with a view of diminishing the numerous fatal calamities that have so often befallen females from the structure of their dress,* and the inflammable materials of which they are composed—as calico, muslin, gauze, linen, &c.—of each of these I exhibited a specimen,—the one impregnated with, or dipped into the solution, and afterwards dried, the other in common water. By applying fire to each of these, there was at once manifested the value of such an agent in extinguishing fire, and with what advantage a small quantity of such fluid might be used, and how capable so small a quantity would be of subduing even extensive fires when water, from frost and other circumstances, could not be procured.

I have thus briefly shown the practicability of what I propose by the test of demonstration, in the experiment at Woolwich in the practice-ground, and that with the barrack engine. If the remedial division of my arrangement be thus efficient, the next question would

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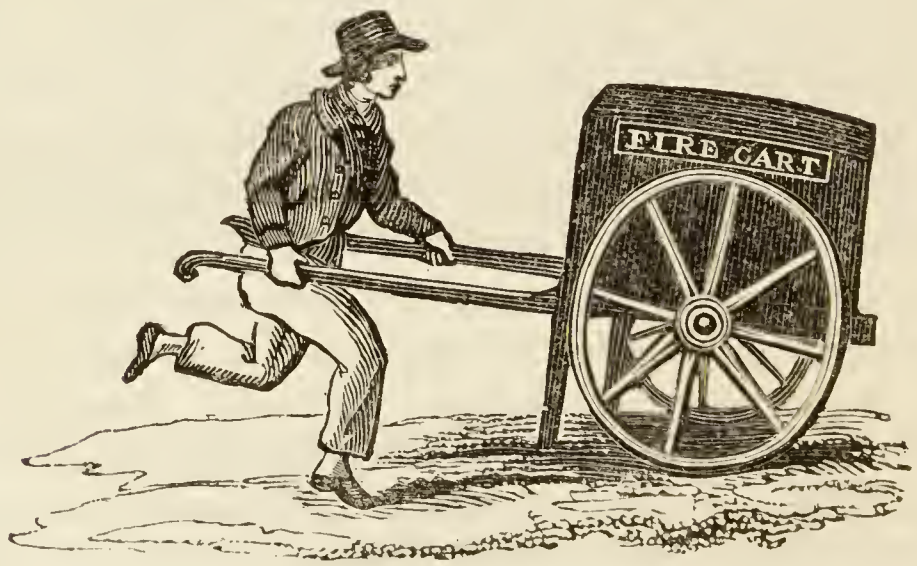
* An illustration important to lessen the accidents so often attendant on the female dress.

be—What is the best mode of putting it into active operation?—No doubt, surely, can be entertained that a well organized body of Fire Police, duly trained, and exclusively occupied in making the circuit of our vast Metropolis, crossing and re-crossing every ramification of its streets, and acting according to a fixed, well-digested code of Regulations, would be the means of stilling many an anxious thought at the period of retiring to rest, and in case of alarm, by being always at hand, or within immediate call, might prevent much mischief, and defeat the dark-laid schemes of the incendiary. A complete set of Apparatus could be deposited at a Station-house, the whole under the charge of one man, who would render assistance at a moment's notice, and, thus, by promptitude of application, many a sacred and public edifice, together with documents of great importance, might be rescued from destruction. By way of illustration, suppose an establishment of my plan had existed at York—that rich and ancient structure, the Minster, would have been saved from the premeditated scheme of the maniac Martin; or, at least, so prompt would have been the remedy, that the damage might have been considerably diminished. Still nearer home, let us call to mind what befel another noble, antique building—Westminster Abbey. The fire that happened in this case was accidental, but much injury to that venerable pile might have been obviated by the timely aid of a Preventive Fire Police. Again, in the occurrence at the Custom-house, who can estimate the benefits that might have accrued from the co-operation of a practised and skilful Police in securing the official papers and immense value of property which there fell a sacrifice to the flames—documents which can never be replaced? I throw out these hints on the broad ground of public and private utility; and, when well weighed, I feel confident they will meet with the appreciation due to their intrinsic value. In an extensive mercantile city like London, where property and goods of every description are necessarily left without an adequate safeguard, who can calculate on their security, either from accident or design? And, in these times of peril from incendiaries, it would seem to be the part of common prudence to adopt any measure that has for its object individual and public protection. The plan of a Preventive Fire Police, which I have thus ventured to suggest, would, to Government, be the means of preserving from

conflagration buildings and papers of incalculable national importance; to the fire-offices it would counteract fraud, in cases of wilful arson, by discovery and prompt extinction; to individuals it would afford a mode of rescuing from destruction that species of property which is now rejected by the offices, tranquillizing the minds of the inhabitants in the alarm of midnight; and, by its ready expedients, mitigate the horrors of the greatest of all human calamities—to the poor generally, and to mechanics, to all such as are unable to insure their furniture and tools, it would be a precaution of mercy, preventing much distress and confusion from fire in contiguous or neighbouring houses; and, lastly, it is evident from long continued and careful observation, as well as from the testimony of intelligent attendants at fires, that the present fire establishment of the insurance companies does not, and cannot be expected to give that amount of protection, to the LIVES and PROPERTY of the inhabitants of this vast metropolis, which the public have a right to demand.

With a view to supply these desiderata the Fire-cart is submitted, containing vessels filled with a fluid, possessing the most extinguishing property, not liable to be congealed by the most intense frost, and rendering whatever substance is extinguished by it, extremely difficult to be reinflamed.



The Cart also, when furnished with a wicker basket, or imperlal on the top, will contain every implement required, and best adapted for the rescue of individuals from burning houses; which, from their extreme simplicity in the mode of application, and from the whole

occupying little space, its immediate attendance must form a valuable appendage to private residences, to individual benefit, and to public establishments.

Through recourse being had to these preventives, fires would, in many cases, be extinguished in their incipient stages; under any circumstances such a check would be given to the flames, as to afford time for bringing and applying more powerful auxiliaries for their suppression.

In concluding my observations on my endeavours, by prompt application, for the immediate extinction and the prevention of destructive fires, and for the rescuing persons from houses enveloped in flames, I most earnestly, as well as respectfully, call the attention of the public, and invite CANDIDATES for the object contained in Dr. Fothergill's will, in which is the following bequest:—

"To the Society for Useful Arts, Adelphi, London, 1,000*l.*, to be laid out in

"Models or premiums under the like regulations (as in the clause relating to the Prevention of Shipwreck), to whom the following subjects are proposed for their consideration:—

"1st. The best method of preventing destructive fires, and of detecting incendiaries.

"2d. Of speedily extinguishing fires when water is scarce.

"3rd. Of speedily securing valuable property from the flames, and also from thieves.

"4th. Of preventing or diminishing the numerous fatal disasters from fashionable muslin dresses catching fire."

The produce of which sum is to constitute an annual or triennial medal for the best essay or discovery on the above-named purposes.

In accordance with the terms of such a bequest—a bequest made by a man whose generous acts during life will ever perpetuate his fame—whose name to the end of time will be venerated by every friend of humanity as a real benefactor to mankind, and whose noble heart was prompted solely by the true spirit of benevolence, animated by a desire to encourage the exercise of ingenuity for productions for the God-like purpose to alleviate as well as to prevent human suffering, and especially that for the preservation of human life. It is,

therefore, an imperious duty no longer to allow the noble design of this distinguished philanthropist to slumber, or its purposes to be defeated. I am, therefore, induced, from the want of some abler person to bring the subject before the public, to hereby give notice of my intention to call upon the President and Members of the Society of Arts, &c., Adelphi, London, by a respectful solicitation that they will, without further delay, so cause and put in execution that part of Dr. Fothergill's will, in reference to the object above set forth, and for which object they have now been in the possession of 1,000*l.* for nearly twenty-five years.

I shall also, in the public name, request to be informed in what public security such sum is placed, considering it proper that all legacies for public or charitable purposes should be invested in Government Securities, and not left in the possession of any society, however respectable and high they may stand in public estimation; I shall also request to be informed what is the accumulated interest thereon, and in what manner it has been, and is employed.

ON THE

SAVING OF PERSONS FROM DROWNING

WHO BREAK THROUGH THE ICE;

WITH A DESCRIPTION OF THE

INSTRUMENTS, APPARATUS,

AND

MEANS OF APPLYING THEM.

ON THE

PRESERVATION

OF

PERSONS WHO BREAK THROUGH THE ICE,

AND

ORIGIN OF THE INVENTION.

The loss of human life is at all times a subject of lamentation; but when the calamity happens in the midst of youth and health, our sorrow is increased, and our regret rendered still keener, when the individuals have perished by the breaking of the ice in the enjoyment of the bracing and healthy exercise of skating. Events of this kind take place every winter; most of which might have been prevented had arrangements been made, and means at hand, for affording instant relief in cases of extreme peril. Among the many instances of this nature, one occurred in the winter of 1813, in Scotland, while I was there. It was attended with the loss of seventeen persons at once, by the breaking of the ice under them, in the presence of numbers who were unable to afford them assistance. I was, therefore, induced to consider how such consequences might be prevented; and I devised a rope with a noose, distended by whalebone, to be thrown over the shoulders of any one, who might have fallen through, and be hanging on the edges of the ice: I also supplied a grapple-drag, that could be lengthened at will, for the purpose of promptly discovering, and drawing to open water, such as might have sunk obliquely, and, on rising, be confined under the ice; or, for raising those who had gone down benumbed or exhausted in deep water. I submitted models of

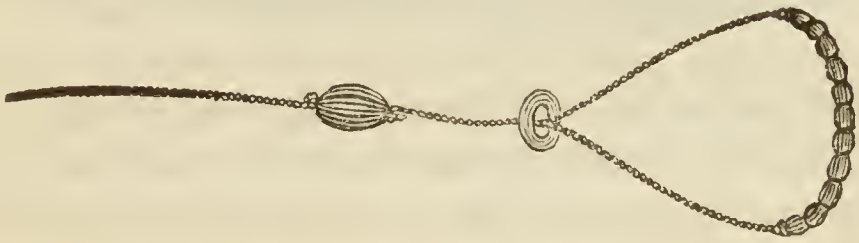
these designs to the gentlemen of the Skating Club at Edinburgh, who approved them, and honoured me by voting their thanks. They instantly provided them, and kept them during the frost under the charge of people, stationed to apply them, at Lochend and Duddingstone Loch, places most resorted to by skaters. The same precautions were taken through the succeeding winters, and have been successfully applied in saving many lives.

On my return to London, after having performed the service on which I had been employed, a drummer of one of the regiments of Guards fell through the ice in the Canal in St. James's Park, and perished, who, on inquiry, I learned, could not, in the usual mode, be approached for affording assistance, from the rottenness of the ice consequent on a thaw, which had some time commenced. This accident convinced me that the means already provided were not sufficient in all cases. I, therefore, constructed models of what appeared to me still requisite, and showed them to some persons distinguished for an anxiety to avert any human calamity, and I was recommended to bring them before the Royal Humane Society. I accordingly addressed a letter to that Society, expressing a wish to exhibit to them models of different apparatus "for saving persons from drowning at the breaking of the ice," feeling encouraged to believe that, by their adoption, drowning by the breaking of the ice would scarcely, if ever, hereafter occur; and ardently hoping that the system might be promulgated through the means of that benevolent Institution. A Committee was consequently appointed for the 19th of January, 1814, when I attended, and exhibited the models of the different apparatus, explaining the methods of using them; and a statement of the whole was afterwards published in the Annual Report for the years 1814 and 1816, with the following illustrative representations.

DESCRIPTION OF THE MODE EMPLOYED FOR SAVING PERSONS FROM DROWNING.

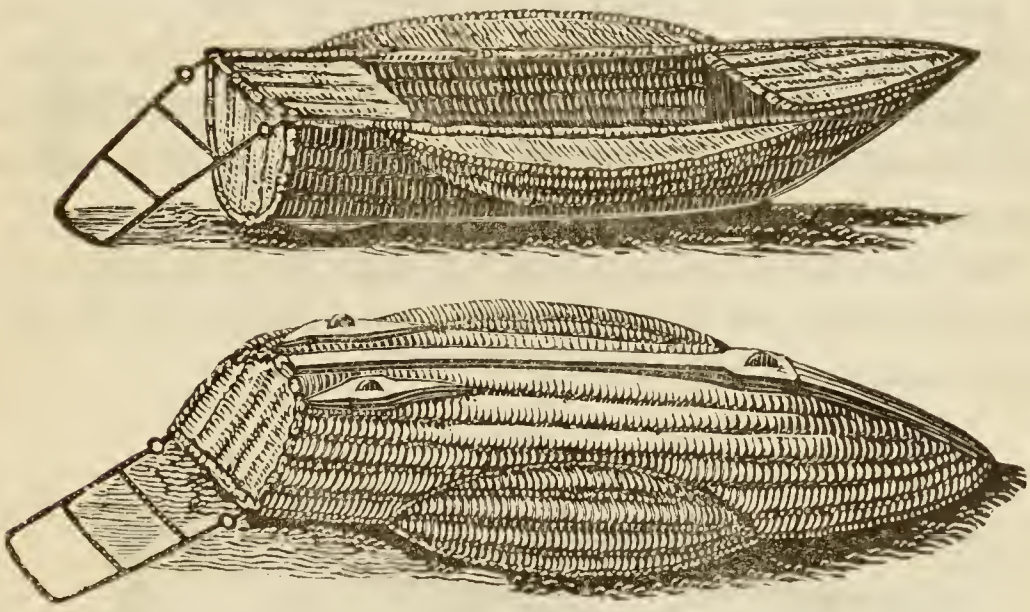
The implements necessary for this purpose consist of the following articles, the application of which will be presently explained :—

Floating Noose.



1. A Rope having a Floating Noose, distended by whalebone, with an egg-shaped piece of wood or cork, at a convenient distance, to be easily grasped by the hand. The evident purpose of this rope is to have it thrown to the aid of a person hanging by the edges of the ice, or liable to be drowned by its breaking.

Gig Boat.



2. A Portable Gig Boat,* made of wicker, for the advantage of extreme lightness.

This boat is rendered unimmergible by air, and is made to stand upright on the ice, running upon rollers. It is to be used when, at

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* The original models of the boats here shown, are deposited in the United Service Museum, Scotland-yard.

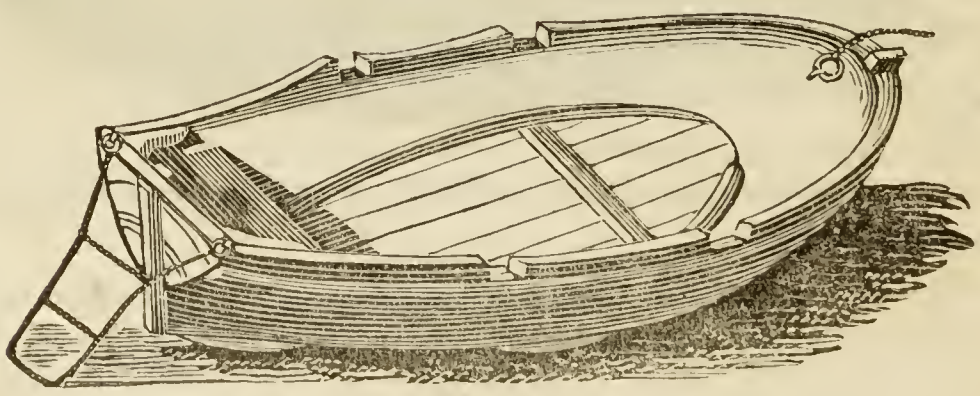
the breaking of the ice, the distance is too great for throwing the rope, or when the means at present in use are insufficient to afford relief. The weight of a boat of this nature will not, I conceive, be more than 16lbs.

Such a boat, with two men in it, will, from the distribution of the pressure of such a weight, by the means of the breadth of its bottom, on a wider surface, pass, without breaking it, over ice much too weak to support a single person, pressing with his weight on a surface no larger than that occupied by his feet. It runs as a sledge on three rollers, placed one in the stem, and two (one on each quarter) in the stern, and may be pushed by one man, with a pole, pointed with iron like a goad, with considerable speed along the ice.

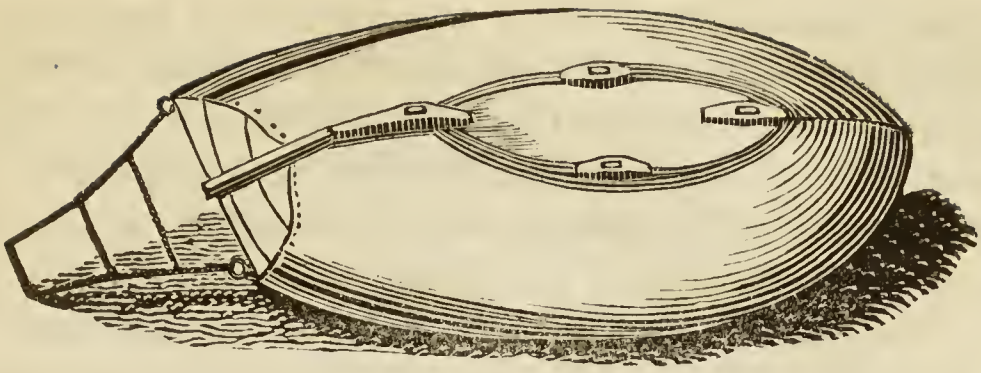
When it is to pass through water, as a boat, the lightness of its materials will support it, carrying the weight of two persons (notwithstanding the ready admission which the water finds through the wicker), and it may rapidly be paddled or rowed.* The buoyancy may be increased to any degree likely to be wanted, by fixing to the boat tin boxes, so closely soldered as to exclude the water, or by cork placed around the gunwale, or cork shavings inclosed in thin canvass, secured within the boat. When it approaches the person needing assistance, the stern is to be turned to him, that his getting in may be facilitated by the ladder which hangs over it.

The roller in the fore part of the boat might easily be made to regulate the direction of the boat; but the sprit answers this end, and all unnecessary complexity is avoided.

Boat.



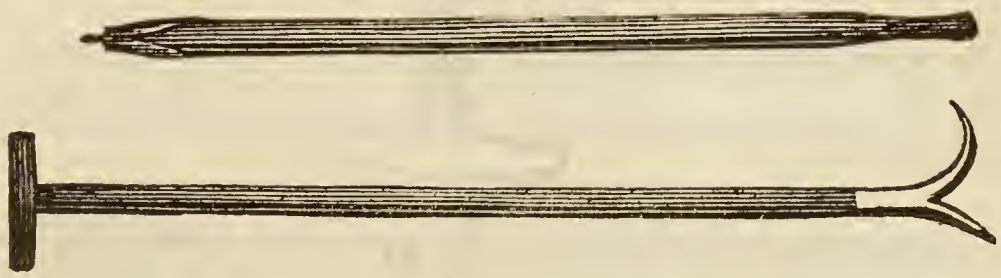
* It may be rendered perfectly water-tight by a painted canvass, exterior covering.



3. A Small Light Boat, intended for the same purpose, but which, from its being formed of stronger materials, may, in some particular instances of danger, be preferable.

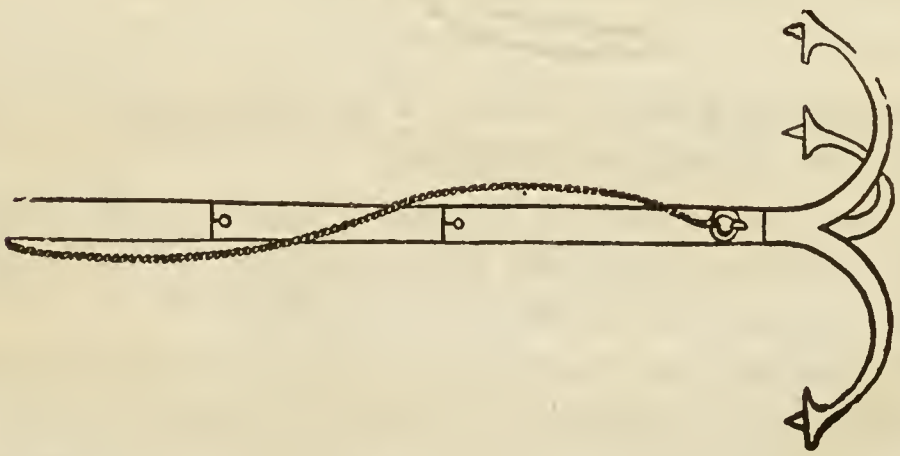
The rullocks, or vacancies on the gunwale of this boat, are not for the purpose of admitting oars; they are made to receive the frame of the ladder, to prevent its slipping.

Sprits.



4. Sprits, armed with iron points, which, by sticking in the ice, are used for impelling the boats forward.

Elongatable Grappling Rod.



5. An Elongatable Grappling Rod, which, in cases where the body has sunk beneath the ice, can be instantly adapted to any common depth of water, for the purpose of grappling for, and bringing the sufferer to the surface. When the fracture is not of great extent,

and the ice near the verge is strong enough to bear his weight, a man may stand and feel in every direction (and from the length of which it is capable) a considerable way round with this grapple for the body of the person who has sunk: whether, therefore, he has gone down obliquely, and, rising, is confined under the sound ice, or is at the bottom, but has been carried by a current under the ice to some distance from the spot through which he broke, or has sunk vertically, in a depth of still water, this instrument may be used with every probability of finding him, and a certainty of bringing him to the surface after he is found. Aware it may sometimes happen, that when the body is found, the attempt to raise it may give an impulse to it which will make it rise faster than the hand will follow it with the drag, and, consequently, it may disengage itself, and another attempt to hook it become necessary, I had thought of barbing the points, as

Barbed Grapple.

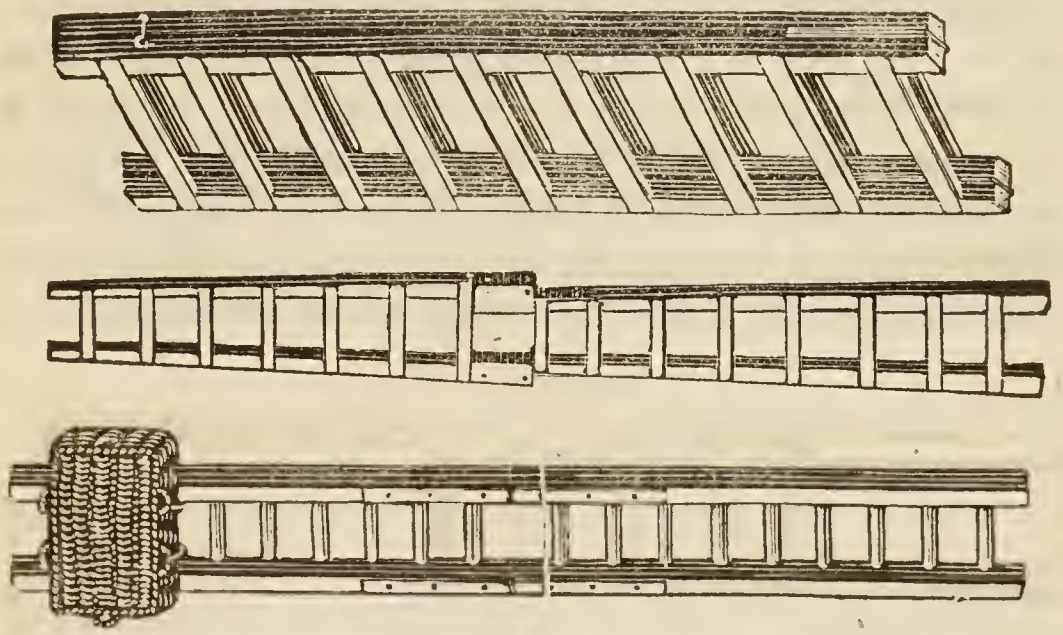
in the subjoined figure; in which *a a* are barbs fitting with springs into mortices on the sides of the point.

b b are continuations of the barbed springs, on the pressure of which, between the finger and thumb, the parts *a a* are completely buried in the mortices on the sides of the point.

The prejudice, from dread of laceration, which I had no hope of obviating, led me to suppress this addition to the drag; though in my own opinion, little harm even to the naked body at all considerable could happen from its use, certainly none where the body was clothed. A third of an inch is the utmost depth to which the point of the drag can pierce; the barbs, after it has once been caught, will hold it on the

point, and prevent the possibility of disengagement, which might happen from the unbarbed points, and would render it liable to a second puncture, or, perhaps, the loss of life by the loss of time. When the body is brought up, and in secure hold, it is but to press the springs, and the barbs completely retire, and the point is drawn out without the slightest obstruction. Whenever there is occasion to search for a person who has sunk in his dress, the drag with the points thus barbed is, without the possibility of an objection, the best instrument.

Portable Ladder and Copper Box.



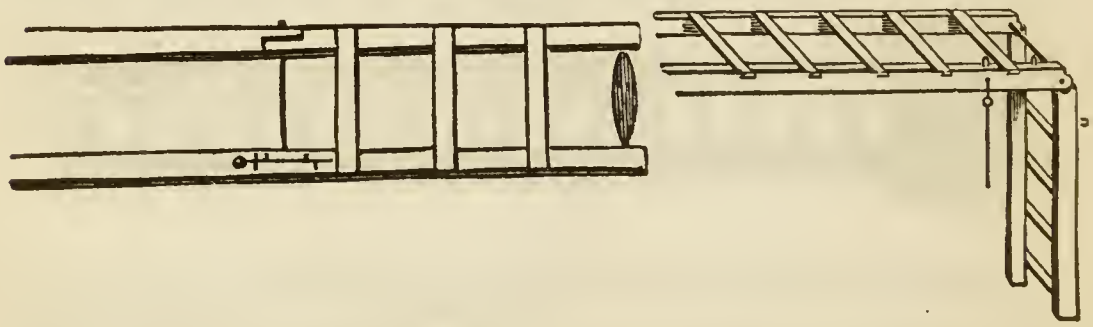
6. Portable ladders for communicating with the boat from the ice, in cases where the current may have carried the body from the place at which it first sank. These ladders may be lengthened by unfolding or fitting in, and made buoyant, as may suit the occasion for which they are intended.

When these ladders are used for the purpose of reaching the person in distress, the butt-ends of the first rest either on the shore or a firm part of the ice, the other ends of which are to fit in the sockets (in which they catch with a spring, and are secured) at the butt-ends of the next ladder, and so on, till the required length is gained. Under the ends of the last ladder, which is to reach to the point of the water, open by the fracture in the ice through which the body has sunk, a copper box, 24 inches wide, 36 inches long, and 12 inches deep (covered with wicker-work to protect it from external injury), is

fixed. This gives a sufficient power of buoyancy to the ladder for the support of two persons on it. Thus, the man, who goes out to the assistance of the person needing it, stands firmly borne on the end of the ladder, and either rescues him, as he hangs on the edges of the ice, or is able freely to apply the grapple in searching for him, and raising him if he should have sunk. When he is brought up, the box serves as a platform to receive him, in the first instance, and he may then be drawn along the ladder to the firm part of the ice, or the shore.

Those who have been witnesses of accidents on the ice, have observed that, from whatever cause, the lower parts of the person who has broken through, and is hanging on the edges, are drawn under the ice. The force of this indraught or suction always makes it difficult, and, under circumstances of numbness or fatigue, impossible for the person in danger to raise himself by his own efforts to the surface, on which the ladder might be lying to receive him : I have, therefore, ordered that, as in the wood-cut, about four feet of the ladder shall be made to let down on hinges, by drawing out the iron pin, when the

Ladder with Hinges.



weight of the last stave, which is of iron, instantly makes it fall, and hang vertically in the water. When this is dropped as close as possible to the person in jeopardy, he may, by a very small effort, get his feet on it, and then either ascend by his own efforts, or greatly facilitate the efforts of another, who may have advanced on the ladders to extricate him.*

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* The Humane Society have, in subsequent Annual Reports, given an engraving of the application of this instrument, and exhibited a still further proof of its adaptation to the rescue of persons who, without this aid, would be inextricable when drawn under the ice. This remark I consider necessary, to establish my claim to the invention, as I do several others they most unjustly wish to withhold from me.

It seemed to me, even when the ice was broken to a great extent, that the ladders might be used with still more effect by means of a buoyant wicker-boat, covered with canvass, in the manner shown in the cut, which exhibits the but end of the ladder resting on the ice, while

Wicker-Boat and Ladder.

the other lies on the boat, which is thus kept steady, while it affords a larger area than the ladder, used by itself, to the men who are endeavouring to extricate the unfortunate person, and admits of more disengaged efforts,

Ladders are also readily furnished with a floating platform, by a small cask (those in which tamarinds are imported are well adapted to this purpose, from the length of their form) slung in ropes formed into rings on the top to receive the ends of the ladder.

APPLICATION OF THE IMPLEMENTS.

Supposing a case in which the ice has broken beneath a person, he naturally attempts to support himself by the broken edges. This he is generally able to do for some time if the ice be strong, as little is required to sustain a substance in the water. If the ice be firm, the

sufferer may be saved with ease, by the ordinary method of assistance; but if relief be prevented from approaching the broken place in consequence of fractures, or the evident weakness of the ice, the bouyant rope thrown by hand, if the distance be not too great, will save the person in danger. On the rope reaching the person, he will immediately lay hold of the egg-shaped piece of wood, and support himself by it with one hand, while placing the distended noose over his head and under his arm with the other. He will then draw down the slide or button, with which the rope is supplied, to prevent the noose from slipping. Extrication from peril may be thus effected by a person standing on a safe part of the ice, and drawing the sufferer out.

This Rope or Floating Noose was originally designed by me, for saving persons from drowning on the breaking of the ice; but its application in affording prompt relief to persons falling or being washed overboard at sea, having met with such general and warm approbation from several distinguished, experienced, and scientific officers of the royal navy, I cannot deny myself this occassion of recommending it to the attention of every philanthropist by the following testament.*

In those cases which so often occur, where the fractured ice is so extensive as to be beyond the reach of ordinary assistance, or of throwing the ropes, one of the boats just mentioned is to be used. They are expressly constructed to be as light, buoyant, and portable as possible, as promptness in danger is the best, and often the only assurance of success—a moment's delay frequently proving fatal. Either of the boats can be propelled over the ice by one active man, with very great velocity, by his fixing the iron-pointed Sprit in the ice, and forcing the boat forward by a powerful purchase of his arms.

For lightness, a boat, wicker-made, is the best of any contrivance with which I am acquainted. It may be rendered powerfully unimmergible, as before observed, by tin boxes containing air, &c., &c.

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* The Annual Report of the Royal Humane Society (for 1814) thus speaks of it:—"The Committee of the Society, during the extreme frost of 1813-14, stationed men on the Thames and Serpentine Rivers, who were supplied with the rope described by Captain Manby; and they cannot too warmly recommend it, from the great good derived by its use in *preventing* the *drowning* of a *great number* of *individuals*."

Where there is much sharp broken ice to pass through, the jolly-boat would answer the purpose better, being stronger, and calculated to meet resistance.

Supposing the person in danger to be holding by the edge of the ice, when the boat is coming to his relief, the stern should be placed towards him, and by a ladder which hangs over that part, the boat is easily attainable.

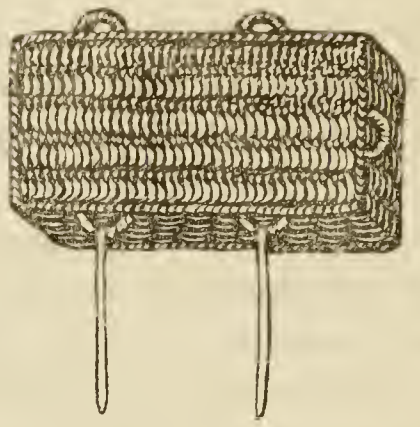
If the unfortunate person has been exhausted or benumbed by the cold, and has sunk before the boat could reach him, the ELONGATABLE GRAPPLING-ROD (always carried in the boat) is to be instantly applied to bring the body up, before the vital spark is utterly extinguished.

There is no mode at present, so far as I know, for effecting this desirable object, when the body has unfortunately descended to a considerable depth. To obviate this great difficulty, the GRAPPLING-ROD or DRAG, is formed of several different joints, of any convenient length, say from six to nine feet long. The joints, or sockets, are all exactly of the same size, and fitting into each other indiscriminately, are secured by a spring, so that they have only to be put together till they form the proper length for the occasion, in one strong firm rod.

With this simple instrument the body may be grappled for, if a slight current, which often occurs, should have carried it under the ice. This may be quickly done with success. To prevent the possibility of the body being lost, after being attached to the grapple, by the joints giving way, a rope is fixed by a ring, fastened by the iron hooks, to which there are sharp guarded points for catching the clothes, or fastening to the body. The points being guarded, no material injury can be done to the flesh, let the hooks catch where they may. Very little force will bring the body to the surface, when it is once attached to the grapple, from the well known principle in hydrostatics, which accounts for the buoyancy of a substance lighter than the same bulk of fluid by which it is sustained. If the body be brought up at a distance from the strong part of the edge of the ice, the PORTABLE LADDER will be found extremely useful. One end of it is to rest on the ice, and the other on the boat: or it can be made buoyant by a thin air-tight box, cased with wicker, as seen attached to one of the ladders—thus answering the purpose of a platform, on

which the body may be placed, and be drawn to a secure part of the ice.

Air-tight Box.



Should the distance between the boat and the edge of the ice exceed the length of one ladder, another may be made to fit in (and fasten with a catch), with its narrow end to the broad end of the first ladder.

Such is a statement of the apparatus which I had invented in furtherance of the great design which had long engrossed my attention. The several instruments were comparatively inexpensive, free from complexity, easy of management, and completely adapted to the proposed end, as I shall now proceed to show; and I take here the opportunity of rendering what is no more than a just tribute to a gentleman (Mr. Robinson), who cheerfully lent his aid in the prosecution of our common purpose; whose only motive was grounded on a principle of benevolence, and whose only desire of reward was to see the fulfilment of his humane intentions, in the preservation of his fellow-creatures.

UTILITY OF THE APPARATUS VERIFIED.

Finding, however, on the approach of the ensuing winter (1814, 1815), that no steps had been taken to provide the means of rescue, at the canal in St. James's Park, I was, from my inability of defraying all the expense myself, encouraged by his reputation for philanthropy, and the zeal evinced on some distressing occasions, induced to apply to Mr. P. F. Robinson, an architect, of Piccadilly, with a request to bear with me half the expense of providing the instruments, and procuring the attendance of men in readiness to apply them. He assented with the

utmost willingness, and the instruments were instantly furnished by Mr. Cuthbert, the mathematical instrument-maker of St. Martin's-lane.

Some experiments were made with the Rope, the Drag, and the Ladders, in the presence of three Members of the Society of Arts, Mr. Robinson (the present Chairman of the Society of Architects), Mr. Cooper (the present Lecturer at the Polytechnic Institution), Mr. Cuthbert, and myself, which produced, in our minds, a full conviction of their complete adequacy to their object. In the frost, which soon followed, two men were stationed with them by the canal in St. James's Park. I was prevented from superintending their application myself by a severe illness; but I had soon the gratification of learning the success which had attended the plan, by the following note from Mr. Robinson:—

"Sunday, January 23rd, 1815.

"Dear Sir—Your apparatus was in use yesterday, at the canal, in St. James's Park, and happily saved a man who must otherwise have perished. He was eight minutes in the water, but saved, to the admiration of the spectators. This occurred a few minutes after I left the spot. The ice is very rotten, and many have been in near the bank. I have two men in attendance, at 4*s.* 6*d.* a-day each. Cuthbert sent me the Drag yesterday, which is on the spot. All the other things are taken to the park-keepers every night; and I shall have great pleasure in being there to see that every attention is paid. I trust our little exertions will prevent a recurrence of the melancholy accidents which so frequently happen.

"P. F. ROBINSON."

"To Captain Manby."

Here is a proof of the fitness of the instruments in the saving of a human being. Who defrayed the expense? Who were the first to station men on the scene of danger? Not—be it permitted me to observe—not the public at large—not a numerous and wealthy body, whose peculiar and appropriate office one would have thought it to have been, to be foremost in so laudable a scheme, and the first to stretch forth a helping hand for its attainment. But to proceed.

In my thanks to Mr. Robinson for this welcome communication, I intimated that it would be desirable to procure certificates of the be-

nefits which had been produced by the apparatus, and I received from him the following note and certificates :—

"Dear Sir—I inclose certificates descriptive of sixteen cases. Your apparatus answers admirably, and, I am convinced, will prove by far the best life-preserver upon ice which has yet been invented, on account of its simplicity. The men who use it are sensible of its value, and feel perfect confidence in trusting their persons upon it.

"Few years pass without fatal accidents occuring on the canal in St. James's Park, and, however strange it may appear, till now, means of prevention have not been adopted. I am happy to have it in my power to congratulate you upon being the author of these means, which for the sake of humanity, I trust will be continued.

"A person living at No. 12, Goldsmith-street, in the City, was taken out of the water yesterday, by means of one of your ropes, the open noose being thrown over his neck. He must otherwise have been lost. About fifteen people were saved on the Serpentine on Sunday by the men in attendance.

"P. F. ROBINSON."

The following are the certificates :—

"January 26th, 1815.

"We hereby certify that, on Saturday, the 21st instant, we saved a man who had broken through the ice on the canal in St. James's Park, and who had been eight minutes in the water, by means of Captain Manby's new apparatus. He was in a very dangerous place, and would inevitably have been lost but for this ready assistance.

(Signed) "THOMAS GRIFFIS, South-place, Knightsbridge.
"THOMAS BAKER, 136, Aldersgate-street."

"We hereby certify that, on Monday, the 23rd instant, two people broke through the ice on the canal in St. James's Park. In attempting to rescue one, I, Thomas Baker, also fell into the hole, but was saved, together with the first man, by my colleague, Thomas Griffis, by means of Captain Manby's newly-invented Drag.

"We are of opinion that the apparatus, by means of which we have saved sixteen lives during the last three days, is calculated to render the most ready and effectual assistance in all cases of extremity,

as we are ready to proceed to any part of a river, however deep the water may be, without fear or hesitation, satisfied that our own persons are safe upon the AIR-BOX, which is sufficiently buoyant to support two persons.

(Signed) "THOMAS GRIFFIS,

"January 25th, 1815." "THOMAS BAKER."

The press now took an interest in the subject, as appears by the following extract from the PILOT newspaper, of the 14th Dec. 1815 :—

"It having appeared that the unfortunate person who perished in the Serpentine, on Sunday last, by breaking through the ice, was lost from the want of proper implements to give him assistance, Captain MANBY was induced to submit to the jury on the inquest some simple machines, calculated to meet every similar case of distress with facility. They were most highly approved, and the jury expressed their intention to send in a memorial to the Royal Humane Society, urging them to provide such apparatus for the Serpentine river." And the following are extracts of a letter from the Registrar and Secretary, T. J. Pettigrew, Esq., to the editor of the TIMES, containing a narrative of the accident that occurred on the Serpentine river on Sunday, the 10th December, 1815, in consequence of some remarks made in that journal, as stated in the Society's Transactions for the following year: —"The crowd increased, and at length no less than twenty-two persons were in the water. Captain MANBY'S ROPE WAS HERE OF INFINITE ADVANTAGE, and by means of it, all, excepting four, were extricated. If the populace had not intemperately (though from the most praiseworthy intentions) interfered with the men appointed to this duty, there would not have been a life lost; the man and his wife would both have been immediately extricated, for with the rope invented by Captain MANBY, they could be relieved without any one venturing on any unsound portion of ice."

My claim to the invention rests here. No steps had been taken for the preservation of life either at the Serpentine, or the canal in St. James's Park. The apparatus was found efficient by the test of experiment, calculated for shallow or deep water, and of such construction

that those employed with it felt—(a most important point)—complete confidence in its application. The most timid might fearlessly proceed to render assistance, and become the means of rescuing those in danger, in the event of the casualties being too numerous for the men stationed on the spot, or whose duty might demand their attendance in several places at one time.

CONDUCT OF THE SOCIETY OF ARTS.

In the opening part I have adverted to the proceedings of a Committee of the Society. I now enter on the subject in detail.

When we look at the Society of Arts, and consider the purposes for the furtherance of which it is ostensibly constituted, we feel at once that the high rank, the unquestioned talents, the extensive intellectual acquirements, and the acknowledged respectability of its members, are a full guarantee that its proceedings will be guided by the strictest impartiality—without cabal, caprice, or underhand disingenuity—that it will be raised out of the vortex of vulgar passion, and that here, at least, if anywhere, the aspirant for fame, the skilful artist, or the unfriended mechanic, will not be disappointed in a fair examination of his invention, nor be defeated in the expectation of the reward held out for any ingenious discovery. If such be the recompense for much toil, perseverance, and expense, in objects that have reference merely to the commoner purposes of commercial industry, I think that all the preceding considerations come still further recommended to our sympathies, when the discovery has relation to the highest of all human concerns—the saving of human life. Upon this my mind has been engaged for many years, and the warmth with which I first cherished it remains still undiminished. After making my statement, I shall leave to the impartial to decide on the nature of the treatment I have received, and whether the conduct of the Committee has been calculated to reflect credit on the Society, or to what extent it may tend to lower it in public estimation.

In the catalogue of premiums for the year 1814, by the Society, there is the following :—

"To the person who shall invent, and produce to the Society

a cheap and portable Drag, or other machine, superior to those now in use, for the purpose of taking up, in the best and most expeditious manner, and with the least injury, the bodies of persons who have sunk under water; the Gold Medal, or Thirty Guineas. The Drag, or Machine, to answer the purpose intended, to be produced to the Society on or before the first Tuesday in March, 1815,"

My apparatus had now received indubitable proof of its merit; and, anxious for the recommendation of the Society to the plan, I addressed a letter to the Secretary, containing a description of the different instruments, and the mode of applying them. The Drag, in addition to its relative use, with the other instruments for the purpose of rescuing persons who had fallen through the ice and sunk, appeared to me, after much consideration, a better implement than any yet in use, for the general purpose of promptly raising the bodies of persons that had gone down in deep water without the danger of wounding them; and I begged, therefore, to submit it by itself to the Society. The letter was accompanied by Mr. Robinson's two notes and the certificates of Thomas Griffis and Thomas Baker. It contains a summary of the different instruments, as already described, and points out the origin and applicability of each article—more especially the machine for which I became a candidate for the Premium offered by the Society, and which was proved to fulfil every requisite demanded by the Society:—

"Oxford Coffee-House, Feb. 14th, 1815.

"Sir—I request you will do me the honour to lay before the Society of Arts the following observations and statements, feeling the fullest conviction that whatever tends to benefit mankind will meet a cordial welcome, and receive its due consideration.

"Scarcely a winter passes without a melancholy and enlarged catalogue of persons perishing by the breaking of the ice; but a circumstance two years since added materially to the list, when seventeen persons at one moment, by breaking through the ice, sank to rise no more, from the want of some easy and expeditious means of rendering relief. This melancholy event took place in Scotland at the time I was in that country, carrying into effect the intentions of the Legislature, to avert, or mitigate, the perils of the storm on the coasts of these

kingdoms. My attention was immediately turned to the production of some simple and efficacious means of affording relief in cases of peril, and that might be found best calculated for places much frequented by skaters; to lay down also some regular plan of application, as to excite a presence of mind in those whose fate might require assistance, and remove dangers from those who, prompted by benevolence, are ready to render aid to the sufferers; and, indeed, from the want of such arrangements, many praiseworthy individuals have fallen victims to to their humanity. These intentions were submitted to the Skating Club at Edinburgh, with my first designs for affording relief; and I rejoice to observe, they have not only been approved, but instruments have been provided by the Club at the Lochs of Lochend and Duddingstone; and the success that has attended a set of the apparatus at the canal in St. James's Park during the late frost, encourages me in the assertion, that drowning from the breaking of ice will scarcely, if ever, hereafter occur. I cannot, therefore, deny myself this opportunity of expressing a hope that the system which I now submit may be promulgated for general adoption.

"To accomplish this design of giving relief I was first theoretically led to conceive that ice life-boats would be the best method, and that two distinct natures were evidently necessary for the purpose, the one to be as light as possible to pass over the ice with celerity, the other consequently heavier, from the necessity of being composed of stronger materials to meet resistance in passing through much broken ice with quickness, to the aid of a person supporting himself with difficulty on a broken piece, or hanging on the edge of the main body, and probably at some distance from the means of giving relief; but boats, although constructed with every consideration to produce the required purposes, when practically viewed, pointed out such insurmountable objections to the giving that prompt relief which is generally required, that it was necessary to abandon the project for a more simple, expeditious, and less expensive method of producing buoyancy with a more portable and better mode of applying it.

"Nothing, I was persuaded, could exceed in construction a ladder for the purpose of affording this nature of relief, from the known principle, that thin ice will support considerable weight when a large surface of it bears a proportional degree of pressure; the ladders were,

therefore, made just of adequate strength, and about thirty feet in length; and, in order to render them portable, constructed to fold in halves, or the end of one to fit into the sockets of the other—the width being two feet, and the staves at a similar distance, allowed a body (which may have sunk) to be drawn through them without difficulty. To give the ladder buoyancy, it rested on a thin copper case, inclosing six cubic feet of air, covered with basket-work to protect it from injury, with handles at each end for the convenience of carriage, and wicker loops upon it to receive the ladder; with these, a floating platform was produced equal to the support of 950lbs. weight; and to confirm the adequacy to the design, two scientific members of your Society went upon it over much broken ice, and the deepest part of the Serpentine river.

"These gentlemen took with them an elongatable grappling drag; which drag, or rod, I have constructed to be instantly adapted to any common depth of water; and I am firmly led to believe that this implement holds forth every promise of bringing persons from a considerable depth to the surface before life is utterly extinguished; it is formed in lengths of nine feet, and the joints or sockets are all exactly of the same size, and fitting into each other indiscriminately, are secured by a spring, so that they have only to be put together till they form the proper length for the occasion in one strong rod. It is particularly adapted to search for, and promptly recover, a body that may be drawn under the ice a considerable distance from the spot where it went down—a circumstance that renders a drag affixed to a line of no avail. In the trial made, the rod was lengthened to twenty-seven feet, and moved in all directions under water with great ease.

"To prevent the possibility of the body being lost when once caught by the grapple, from the joint or rod giving way, a rope is fixed to a ring near the end, and, as the points of the hooks are guarded, no material injury to the flesh can take place.

"Although this drag forms a part of the apparatus intended for saving persons liable to perish from having fallen through the ice, yet it is hoped the Society will view it distinctly, and receive it as a production subject to consideration for the premium they have been pleased to offer, 'for a portable Drag to raise the bodies of persons who may

have sunk under water, in the most expeditious manner, and with the least injury.'

"I beg further to call the attention of the Society to a life-rope, for affording prompt relief to persons who may be hanging on the edge of the ice. It consists of a rope having a noose that can be enlarged or contracted by a small wooden slide, or button, through which the spliced or double part of the rope passes. This noose is kept open by a piece of whalebone, that passes with the rope through a number of corks, which keep it afloat; a buoy of cork fixed on the rope makes it easily grasped by a person in danger, which prevents it from slipping through his hands, as might happen with a common rope: by this buoy (when resisted at the other end of the rope) he can support himself while he is putting the noose over his head and arm; having done which, he can secure himself in it, by pulling the slide or button; thus secured, he may be drawn to the shore in safety, or to a ship, and up the ship's side, without any injury, the corks serving as an additional protection from being galled by the rope.

"In offering this production to the Society, I feel more than common gratification, from the persuasion of the incalculable benefit that must arise from this very simple application. I am led to this remark from the opinion of the numerous professional persons who have seen it, most of them declaring that, in the course of their service, they have witnessed many cases where it would certainly have saved lives; and also from a testimonial that appears in the Annual Report of the Royal Humane Society, of last year, in consequence of its having been exhibited to that institution—

> "'The Committee of that Society cannot too warmly recommend it, from the great good derived from its use in preventing the drowning of a great number of individuals by it, las winter, on the Thames and Serpentine Rivers.'

"Having now concluded, permit me to say, I shall most readily obey the wishes of the Committee your Society may please to appoint, whenever their leisure may think proper to command my attendance, with models, &c.; and it would be conferring an obligation could it take place early, as I am in daily expectation of being di-

rected to proceed, by the orders of Government, to carry into general effect my method of saving persons shipwrecked on a lee-shore.

"I have the honour to be, &c. &c.
"G. W. MANBY."

"To C. Taylor, Esq. M.D.
Secretary to the Society of Arts,
&c. &c."

The Society, in consequence, appointed a Committee to report on my project, which I attended, exhibiting the rope recommended by the Royal Humane Society; the Portable Drag, that had been actually employed in saving the lives of persons at the Canal in St. James's Park; and models of the other instruments. The subject was open to competition till the first Tuesday in March, 1815, and the Committee adjourned to a period subsequent to that date. When the Committee then met, I was withheld by a severe indisposition from attending it; but I was informed that much hostility had been displayed towards me, which betrayed some of the Committee into great warmth of temper and irregularity of proceeding. A resolution had nearly passed to bestow on me the Silver Medal only. Some persons, however, of more liberal minds, pointed out the impropriety of bestowing the silver medal as a reward for an instrument submitted by me as a candidate for the Gold Medal, without any competitor against me, and while the existence of any previously invented instrument of superior utility was never urged. These persons, to prevent a step so palpably absurd and unjust, prolonged the discussion till eleven o'clock at night, when, by a rule of the Society, all business must be concluded or adjourned.

One of the Chairmen of the Committee (Mr. Gill), from the benevolent intention of sparing me the chagrin of a rejection, which he found to be predetermined, advised me to withdraw the instruments. He stated at the same time, as the cause of the hostility which he had anticipated, that I had offended the Committee, by presuming to assert that my plan for relief from shipwreck originated altogether with myself; while it was their desire to have it understood, that I had derived it from a prior invention of the late Lieutenant Bell, of the Royal Artillery; an invention which was carried into practice, as far as a single experiment, on the river Thames, and rewarded by the Society

with a donation of fifty guineas, and then never more heard of till it was raked up, and vainly endeavoured to be rendered a good ground of disparagement against me.

One word here: I am willing to acknowledge—I have acknowledged in a previous publication—the merit due to Lieutenant Bell; but if his invention was deemed worth a premium of fifty guineas, surely it ought to have been worth using; but who has ever heard of it?—what lives have been saved by it?—is it, can it, be employed? No. The Society have committed themselves by rewarding a thing of no value; and then, in return for rejecting that which is of a practical application, ludicrously propose that I shall acknowledge to have borrowed from that which has lain dormant from inutility ever since it received the sanction of their approval!

I attended, however, to the advice of Mr. Gill, and withdrew the instruments from the Committee. I was afterwards encouraged and advised by a gentleman (Mr. Hedges) who had witnessed the proceedings, and who, though a stranger, felt for the conduct that had been adopted towards me, and for the reputation of the society—to submit the instruments again at a General Meeting: I complied. At this meeting they were also rejected. I should now, but for the most decisive evidence that sixteen persons had already been saved by them, and the opinions of many gentlemen who attended the meeting, and who, unable to resist that evidence, had contended strenuously for their merit, have been ready to conclude that my continued belief in their utility was the consequence of a kind of parental fondness for my own productions. The preceding facts and opinions, however, would not permit me to draw such a conclusion, till I had been driven from every other motive for their rejection. I could even rather believe that extraordinary exertions were used by those, who had predetermined to decide against them in the Committee, to effect the same decision at the General Meeting. A vote by the latter, contrary to the one predetermined on in the Committee, would have involved some sort of reproach on them. It would have been at least a rational motive for maintaining an opinion which they had so irrationally adopted. This motive might have made them active, and thus a majority might have been collected against the subject of discussion. I beg to be distinctly understood that I make no such charge; my only desire is

to illustrate my difficulty of conviction, that a sense of their inutility was the cause of their rejection, in the teeth of the facts above stated.

I must here state one circumstance connected with the subject, from a strong and indignant feeling, in being suspected of meanly and dishonourably offering a fraud to obtain the prize; contained in a letter to Thomas Griffis from the Secretary, "requiring, in the name of the Society, to be informed of the the truth of his saving the lives of many persons from drowning, by means of Captain MANBY's drag, and also, to the reality of his having signed certificates to the same;" which letter Griffis most properly brought to me, and which, with other documents, will be duly preserved.

With regard to the other instruments, however I may lament the conduct which led to their rejection, and deprived them of that patronage of the Society which might have promoted their adoption, I shall neither indulge in reproach nor complaint. The offer of them was quite gratuitous on my part, without any encouragement from the Society. I neither expected nor desired any reward for them. It is a loss without injury. But it is otherwise with the DRAG.

The Society, by their advertisement, enter into a contract with the public. The conditions of this contract I have fulfilled, while performance is withheld on their side. I have produced a PORTABLE DRAG which corresponds with the description in their advertisement of premiums for projects, and yet I am refused both the medal and the thirty guineas. My claim could be defeated but in two ways: either by a superior instrument in competition, or a superior one already in use. It is not even pretended that either was the case: as to the first, no other drag was produced; for the second, a drag invented by Doctor Cogan, and rewarded by the gold medal of the Society (in the year 1806), was indeed carried into the Committee-room while the merit of mine was under discussion, but the Committee did stop short of hazarding their reputation for correct judgment, and prudently refrained from a decision that this instrument was better than mine. It would really have been more prudent to pronounce an arbitrary rejection, than to have rested their decision on such a preference.* Dr.

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* The Royal Humane Society having caused an engraving of the implement, I have placed a correct model of it in the Polytechnic Institution.

Cogan himself (and the Royal Humane Society, in one of their Annual Reports, praise him for his candour in the confession) has declared that it is unequal to its design; and adds, "that the bargemen, in all accidents, neglect it, and employ the common boat-hook, notwithstanding the great danger of laceration to the body which attends the use of the latter." There was nothing then in competition with me; and it was not resolved that there was a superior drag already in use. I was, therefore, entitled to the gold medal or thirty guineas; but this is denied, and a confused attempt, for the purpose of varnishing over their own injustice while they defeat my claim, was made to carry a vote of the SILVER MEDAL to me. What else could it be? I reiterate that there was nothing in competition with the Drag; and if it should now be pretended that Dr. Cogan's was superior, why vote the silver medal? How could that deserve any reward which was only second in merit to an instrument, the very author of which had abandoned its pretensions?

In vindication of myself from which unjust accusation, the following was the commencing part of an appeal, addressed by me in the year 1816, to its President, Vice President, and Members, which sentiments are not unworthy the attentive consideration of any society, nor are they unimportant to regulate any other individual actuated by the desire to encourage science and the useful arts.

"GENTLEMEN—My address to you is occasioned by a wrong which I consider myself to have suffered, from the conduct of a Committee of the Society which you constitute. If the injury, of which I am about to complain, ended with me, I could, at the present period of my life, without much violence to my feelings, have made my desire of redress submit to my aversion to give you trouble, and have suffered in silence. But the facility with which I have been injured proves how little protection there is to others. A confidence, like the audacity of impunity, may be the consequence of escape from censure in the present instance; and the injustice, of which I complain, grow wide and frequent, till at length, the effects of your Society are the direct inverse of your intention on its institution. That intention was the promotion and reward of ingenuity, and nothing could be better adapted than the plan to the design. On its first exposition, it attracted, as

could not but have been foreseen, all the ingenious. Whether fame or reward was their end, the nearest way lay through the society. Small contributions from the wealth of its numerous members supplied the expense of wide publication; and the commendation of so respectable a body assured general adoption. It became a necessary consequence that, while the society could furnish Committees, fitted by science to estimate correctly the claims of candidates for its honours and rewards, and too high, both in rank and mind, to look on any production through a prejudice against its author, the society was what it professed to be, an encouragement to the arts. But it is, perhaps, too democratic in its constitution. Certainly, the admission to it has been very general; and, if those, who are most fit from their rank, wealth, and knowledge, when the institution has lost the excitement of novelty, are content to continue their patronage, without contributing their personal superintendence, the direction must fall on persons neither exalted by rank, nor that dignity of mind which flows from a liberal education, above the excitement of undue influence. With such persons, prejudice and ignorance will enter; and, left to their uncontrolled guidance, it is evident, that the society may very soon have an operation on the arts quite opposite to its title. If no such society existed, the ingenious man, without any private support, when he has completed his project, must, if he would publish it, give it unushered by patronage at once to the world. There it might meet the eye of some person able both to estimate its merit, and give it reputation. The artist is rewarded, and the public benefitted. But let him present himself to the society for the encouragement of the arts, where, for the science and candour which he expects, he shall find that ignorance and prejudice pronounce upon him; and what are the consequences? He retires disheartened. With his hopes he abandons his exertions. He either distrusts his own judgment against that of the society, or, if in the confidence of genius, he still maintains his opinions: yet with what chance of success can he now give his project to the public, clogged in all its parts by the disapprobation of the society? Thus, inventions, which might have added to the safety, ease, and elegance of life, may be cast aside for ever, and left to moulder away in the repository of the Adelphi."

On this very unexpected decision, I demanded of the Secretary, Dr.

Taylor, my letter addressed to the society, and all the connecting documents : they are preserved as a record of the conduct of a committee emanating from a society, the principles of whose institution I admire, and for a great majority of whose members I shall always feel that esteem which is due to their rank, virtue, and talents.

While thus urging my claim, it will be acknowledged, I hope, that I have treated the subject with temper and candour. If my statement draw the attention of those members who have the power to reform an institution, which, administered on the principles of its first establishment, cannot fail to be beneficial to the public, I have gained my object. From the rejection by the society, there was no provision of instruments during the frosts (after my becoming a candidate) on St. James's canal and the Serpentine river ; and I had, consequently, to regret the loss of two persons who afterwards perished, under the very circumstances in which the instrument had before saved the lives of many.

Having nearly brought my ideas to a close on the facility of affording relief to persons exposed to perish by the breaking of the ice, as well as of rescuing those who, by similar accidents, may be struggling between life and death ; having explained my apparatus, and methods of application, which have been stamped with a high character by a jury, and other competent judges, and which have received incontestable proofs of their utility, in the preservation of numerous lives, I therefore now take my leave of that subject. There is, however, one other circumstance which I consider necessary from a sense of public duty to state, for the purpose of calling the attention of the Members of the Royal Humane Society, with a view to its prevention in future.

It is proper to preface the occurrence by expressing the warm friendship I have long entertained for that highly meritorious gentleman who resided at the Society's Receiving-House, by the side of the Serpentine river, in Hyde Park (Mr. John Pritchard, an officer of the royal navy), not only from his philanthropic conduct to promote the object for which the society was formed, and for which purposes that edifice was there placed, and by whose active and intrepid exertions the society have derived so much credit—claims that would naturally lead me to attach myself to such a man ; but if possible, a still stronger cause claimed for him my regard, from my having been the

humble instrument to save his valuable life, when he was shipwrecked on the coast of Norfolk, some years since, and under circumstances, to use his own words, "that no other means could possibly have saved him and his companions from inevitable death, but those then employed."

These recollections have naturally inspired in me a peculiar pleasure on every occasion to meet him, and the more so, from finding him to possess one of the best qualities that adorn the human heart—that of gratitude. On my visiting him, early in December last, I expressed a strong presentiment, and foretold to him my persuasion, that a severe winter would soon set in, and pressed on his attention the necessity to have all the life-apparatus placed in his charge, for the rescue of those who break through the ice, in the best condition, ready for immediate application whenever their uses might be called for. I inspected them with him, and saw every suggestion completed before I left town. I also submitted to him my opinion, that great advantages might be derived by instructions being printed, and distributed on the setting in of a severe frost, to direct those who might require assistance, and those who exerted themselves to give it, how to act to insure success. I, therefore, drew out the following hand-bill, caused it to be printed, and took the copies to Mr. Pritchard, with a request that he would forward them with an accompanying respectful letter from me, addressed to the Secretary, Mr. Berkley Westropp, expressive of my readiness to pay for the same, and hoped that it would not only receive his approbation, but that of the Committee, and that they would permit them to be applied for the purposes so named:—

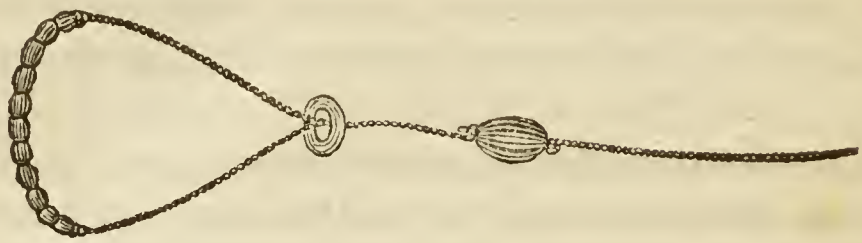
"FOR SAVING PERSONS FROM DROWNING WHO BREAK THROUGH THE ICE,

By means of the Implements provided by the Royal Humane Society, at the Serpentine river, and the lake, in St. James's Park, during frost.

DIRECTIONS RECOMMENDED.

"When the ice has broken beneath a person, he naturally makes every effort to support himself by the broken edges, which he is generally able to do for some time, if the ice is strong, as little is required to sustain a substance in water; consequently, if the ice be of a firmness

to allow a person to approach sufficiently near to propel a distended buoyant sling, by hand, of this form



the sufferer, by attending to the following instructions will be assuredly rescued :—On your reaching this life sling, lay hold of the egg-shaped piece of wood, which the person who threw it, on observing, he will hold firm the other end of the line, to give a sufficient resisting power for you to support yourself with one hand, while placing the distended noose over your head, and under your arm with the other; which done, you will draw down the slide, or button, to secure yourself in, to prevent the possibility of the noose slipping. The people on land seeing this, will draw you into safety; in a similar manner to those who are hauled through a surf, in cases of most dangerous shipwreck, when a vessel is going to pieces, and time will not allow of other means to be employed.

"If relief be prevented, from difficulties to approach the broken place, in consequence of fractures, or the evident weakness of the ice, a rope suspended across the water will be immediately lowered, and swept towards you, until one of the distended nooses are brought within your reach, which you will secure and apply in a similar way to that just explained.

"Those who have witnessed accidents from the breaking of the ice, have observed the almost impossibility of a person to raise himself, by his own efforts, upon the ice, even if a ladder is conveyed to him. It has, therefore, been found necessary to construct a ladder with a joint about four feet from the end, acting upon a right angular hinge, and the last stave to be of iron sufficient in weight, that on its coming into open water, it will fall down, and hang vertically; by which, the person in danger can ascend by the other staves, to the surface of the ice.

"When the use of an ice-boat is required to the assistance of a person hanging on the edge of the ice, the end having a rope-ladder

will be turned towards him, by which he will be able to support himself, or, with little aid, to get on board. The ice-boat may be exceedingly useful as a platform for a ladder to rest upon, to recover, with a grappling rod, those who may have sunk before assistance could arrive, or be drawn under the ice by the influence of a current.

"An attention to these directions will give confidence to those in danger; and spectators, not interfering with the men employed on this service, will best tend to their successful exertions.

"GEORGE WM. MANBY,
"Hon. Mem. R.H.S.. &c., &c."

It will be here observed that I have given the Society the fullest credit for thus having provided the implements required for the preservation of those who break through the ice, and have taken no merit to myself for the authorship of those implements; yet it will be scarcely believed, they were returned to Mr. Pritchard, with directions for their being forwarded to me; an act so insulting or more discreditable render it a duty I owe to myself thus publicly to censure.

In this review, which I now lay before the public, and which contain the labour of nearly thirty-five years, spent in unceasing endeavours to rescue those of my fellow-creatures, whose fate has exposed them to the peril and distressing effects of shipwreck, or to the not less distressing and melancholy ravages of fire; and when I consider the deplorable loss of lives sacrificed in the pursuit of recreation—a pursuit that may be greatly disarmed of its dangers—and in the attainment of these objects, I have not only faithfully employed the whole of the grants made to me by Parliament, but also of my own private resources. I cannot but reflect with pride upon time so engaged, and with consolation, although these labours have subjected me to severe mortifications, and to the treatment most discreditable to those who have been actuated, some by the low feelings of envy, who cannot bear to see an individual advance by his own industry; some to gratify the rancour of political vindictiveness; and some to satisfy a revengeful persecuting spirit, caused by secret enmity—a line of conduct difficult for me to determine, to entitle them most to my indignation or to my compassion. It has also subjected me—I express it with deep sorrow—to the discourteous treatment of some in the Association

formed in my native county, for the "preservation of the lives of shipwrecked mariners," treatment that has compelled me to discontinue my regular attendance at their meetings; it has especially exposed me to the unsparing hostility of persons in whose hands the life-apparatus is placed. On which conduct I shall, from a duty due to myself, cause an inquiry from what source it has proceeded? I have given no offence beyond asserting, what I still maintain in, and justice, which surely I had a right to expect, as its author, would have been confided to my care, at least, that part which relates to the selection of the stores constituting the apparatus—a service that is stamped with my name; by which failures that, in some instances, have brought discredit on its operation, from the use of defective or improper stores (proofs of which I have in my possession), thereby have placed me in a position to suffer from reprehensible mismanagement, and insultingly taunted by a declaration publicly made—"that of bringing into general use rockets in substitution for that of the mortars," in defiance to the often tried fail ure of rockets in practical application; and where lives have nearly been sacrificed to bear out so wanton a declaration, although the utility of the mortar has been confirmed in such innumerable instances, and been the happy instrument in saving the lives of so many of those who must be considered the best protectors of the state.*

In the various representations and expositions detailed in this work, either in reference to public bodies, or private individuals, I distinctly declare, that I have not been actuated by any private views, nor selfish motives, or personal resentment, but as an unflinching lover of justice, an enthusiastic friend to humanity, and a fearless exposer of abuses whenever tending by their pernicious influence to discourage useful labours, and the rejection of productions of whatever has for its object benevolent purposes.

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* Rockets, as I have before repeated, are proper to accompany mortars; but I hope mortars will not be thrown into disuse, until a more certain and efficacious method is produced. Of the mortar, the services was thus beautifully and eloquently described, by the late Duke of Norfolk, on presenting me with a medal thirty years since:—"Sir, there is a peculiar and an unparalleled merit due to you, that for having converted an implement purposely formed for man's destruction, to be the only means by which his preservation could be effected."

In that detail I have also, as already stated, expressly invited the most earnest attention to the evils, or more properly, abuses, where I considered they existed, and where the interests of humanity, were materially concerned; I do therefore, importune the attention of the British public to the noble bequests made by Dr. Anthony Fothergill, not only from a desire to see the general intentions of that great good man, as set forth in his will, carried into effect, also with a view to inspire others to follow his beneficient example; but I have still a further object, from it being my intention to bequeath a certain part of what I may possess on my death, for the general purposes of humanity, and especially for the saving of shipwrecked mariners, and the prevention of shipwreck; such bequest, in trust to the Directors of the Polytechnic Institution, on the confidence of the high opinion I entertain of their integrity, and fullest persuasion that the most honourable and straitforward line of conduct will ever regulate their actions, faithfully to administer the purposes so directed, and not allow the intentions of any testator to be defeated or diverted from the specific object confided to their trust. I am further influenced in such intentions from the deep interest I take in the welfare of the society, and on the confidence they will only employ in their establishment, those possessed of irreproachable character, and of known respectability, desideratas, so highly important to display the dignity of an Institution from which such immeasurable benefit to advance science will result, if private intrigue or party spirit is not allowed to enter, and proper management direct its concerns.

In my labours here set forth, I have felt an anxiety to stimulate others to useful pursuits, and to show what the exercise of that important quality of mere PERSEVERANCE can effect, also to prove what an individual can accomplish without even the slightest pretensions to genius, and possessing abilities only of an ordinary description. It may, however, be proper to observe, that the impressions to the sacred cause of humanity were early implanted in my breast, and the religious sentiment ever predominant, "that those who do not endeavour to perform all the good in his power incurs actual guilt."

Here then I close, a full, and I trust, satisfactory statement, to explain the various models, placed by me, in the Polytechnic Museum for general information. A description of their several uses, to instruct

those who may feel a desire to employ them, either for public good or private amusement; and in my exposition of conduct opposed to me. I now feel nothing like the spirit of ill-will to any human being. I have spoken plainly, because I prefer plain dealing; and, as a lover of truth, I have narrated facts, with a view to obtain which constitutes the proper character of reform, that of correcting abuses.

I am drawing fast to the termination of my existence, and concious of my own integrity, I look with calmness upon the past scenes of my life. From the claims that I have upon the Royal Humane Society and the Society of Arts, I will never recede, until they have awarded the prizes they are bound to distribute either to myself or to persons whose pretensions have better and stronger claims for the rewards proposed.* Though disappointed and hitherto rejected, I still feel as warmly for the welfare of those institutions as ever, from the confidence of their great benefit, if properly directed; and I here record those opinions as a document that may be appealed to when I am no more.

I remember to have heard that a Grecian of old, when condemned to an ignominious death, solicited, as his only favour, that it might be inscribed upon his tomb, "That he had been condemned for saving his country;" so, when it shall please the Almighty to terminate an existence now drawing fast to its close, I desire no prouder memorial than the name of MANBY, to be inscribed, with the simple addition, "His life was devoted to the service of humanity, and that some hundreds of his fellow-creatures live to testify that those services were not exerted in vain."

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* I hereby give notice of my intention to propose myself a candidate for the prize medal, under the will of Dr. Fothergill, in respect to "the speedy extinction and prevention of destructive fires when water is scarce."

APPENDIX.

A description of the two drawings placed in the Polytechnic Gallery, executed by Mr. W. Joy, of Chichester, representing the Wreck of the *Killarney* steamer, on the 20th of January, 1838, in the vicinity of Kinsale; and of the manner by which the survivors were rescued on the following Monday; with a detailed account, from the testimony of one of the passengers, of their sufferings on that distressing occasion.

The Killarney, a fine steamer, nearly new, belonging to the Bristol Company, and capable of carrying a cargo of 200 tons, exclusive of coals, left the quay at Cork about half-past nine o'clock on the morning of Friday, January 19, 1838, on her voyage to Bristol, the wind blowing hard from the south-east. She had on board eight cabin passengers; viz., Richard Callaghan, Esq., brother of the Member for Cork; Lieutenant Nicolay, of the 99th regiment; Dr. Spolasco and his son; Robert Lawe, Esq., and Mrs. Lawe; Mr. John Collis, of Castlecook, and Mr. Thomas Foster, of Ballymaloo, both of whom where apprentices to Mr. Robert Beamish, the engineer. There were also 13 deck passengers; and the crew, consisting of George Bailey, the captain; George Rowles, the mate; six seamen, two engineers, four firemen, two coal-trimmers, a steward and stewardess, and three assistants and the cabin-boy; being a total of 43 persons on board. She had also about 90 tons dead weight of cargo, and 650 pigs, 250 of which were in the forehold, and the remainder on deck. After she passed the light-house it was blowing what the sailors term "half a gale;" the vessel, from the number of pigs on board, dipped very much, and having shipped some seas, the passengers became alarmed,

and with the crew, requested the captain to put back. With this the captain complied; and when he had nearly reached Poor Head he put about and returned to Cove. It was then about three o'clock, and Lieutenant Nicolay and Richard Callaghan, Esq., went on shore, whence the former proceeded to Spike, and after dining with some of his brother officers, again went on board the Killarney; but the latter returned home and gave up the voyage. The wind had by this time somewhat moderated, but still the evening was so threatening that the passengers who were below after dinner, unwilling to risk their lives, having heard that the captain was about to put out again, sent up for him to protest against it; the captain, we understand, did not go down, and in a few minutes they heard the engine at work, and the vessel was under weigh; they started up in terror—a melancholy foreboding of the catastrophe seemed to have seized them; and poor Nicolay exclaimed, "I trust in God we may see our friends again." Poor fellow! to him, and to three-fourths of those embarked with him, that hope was not to be realized. It was just eight o'clock when the vessel was quitting the harbour; she stood for Ballycotton, the wind increasing every moment, until it blew a full gale, and the vessel going very slowly; this continued until midnight, the vessel rolling dreadfully, the pigs bearing her down to leeward, and every wave that struck her causing her to dip so deeply that she shipped several seas. A great quantity of water poured down into the forehold, the hatches having been left open, as there were about 250 pigs in it. There were about 400 pigs on deck, and, in order to lighten the vessel, the captain directed all hands to exert themselves to throw them overboard. Exert themselves they did, till four o'clock in the morning, but overboard it was impossible to get the pigs: in the language of one on board, "they clung to the vessel as if they were destined to be her destruction," and she leaned so much that the sailors were unable to attack them with effect. One man, however, contrived to seize two of them in his arms, and threw them overboard.

Up to four o'clock on Saturday morning they managed, by means of the air or engine-pumps, to work the hold tolerably clear of the water they had shipped, but at that hour some small coal got into the pumps and choked them. The water then rose rapidly until reaching the level of the fire, when it rushed in and extinguished it: the engines

no longer moved, and all was given up for lost! Even the stout hearts of some of the sailors failed them—they seemed completely paralysed. Many of them, however, held out, and all that man could do the captain did, to encourage and help them. Upon nearing the rocks she let go her anchor, which immediately came home, and swinging round her quarter, struck upon the rocks, upon which twenty or twenty-two persons scrambled, many of whom were washed off and perished. The scene in the cabin was not without its interest; with one exception all was silence, we might say—despair; but one voice was to be heard, and that the voice of a woman; the passengers had quitted their beds, and were congregated in the ladies' cabin, and there, amid the terrors of the storm and the roarings of an ocean that threatened every instant to engulph them, a lady's voice ascended to heaven for mercy; that lady was Mrs. Lawe. Nothing could exceed the magnanimity of this lamented woman: she endeavoured to cheer her companions in misfortune, and some of the sailors that went down into the cabin she exhorted not to be daunted, but to put their trust in God, who could protect them on the sea as well as on the shore. During the whole time that she was engaged in prayer (the passengers, deck and cabin, assembled round her) she held one of her husband's hands clasped in hers, and this she continued until the vessel having neared the fatal rock. The steward ran down, and called to them to go upon deck —that they were all lost.

While matters proceeded thus in the cabin, the sailors and some of the deck passengers were engaged in endeavouring with buckets to lighten the vessel of some of the water in the hold, and after several hours hard work, they so far succeeded as to be able, about twelve o'clock on Saturday, to get the steam partly up again. They were at this time utterly ignorant of where they were, or whither they were going, for the fog was so dense that no object was visible. They endeavoured to keep the vessel's head to the wind; but after some time they found that they were going to leeward. The jibsail was then set, in order to keep her steady, but no sooner was it run out than it was blown into ribbons. About three o'clock the fog cleared away, and they saw land behind them, but what land it was they could not tell; one took it for Poor Head, another for Rochi's Tower, and the captain, we believe, for Kinsale Head. It was then blowing a complete hur-

ricane—the coast was covered with rocks; and they saw that if they drifted, destruction was inevitable. By the captain's order the main-sail was set, and the engine-men were directed to do their utmost to get up the steam, in order to keep her off. The steam, unfortunately, was so weak as to be of no assistance; it scarcely moved the crank; and the sail had to be hauled down, lest it should throw her on her beam-ends. The staysail was then tried, in the hope that it would enable them to round the point, but they could not haul it out. Mr. Foster then pointed out a bay, which he said was Robert's Cove, and recommended the captain to run in there, as there was a boat harbour in it, and beach her; the captain said he did not think there was a harbour there, but at all events, it would be impossible to make it. The vessel was all this time drifting nearer to the rock on which she ultimately struck; and in about an hour after Mr. Foster had given the recommendation alluded to, the captain got the vessel round, and endeavoured to make for Robert's Cove. Just as he had got her before the wind she was, however, pooped by a tremendous sea, which carried away her taffrail, the wheel, and the two men who worked it (John Price and James Atfell), the companion, the binnacle, and the breakwater. Price and Atfell, fortunately, caught part of the rigging, and were saved; but the sea which did the damage, carried away the bulwarks, with some of the steerage passengers, who were standing near the funnel, and cleared the deck of all the pigs that were on it.

It was when the vessel was nearing the rock, and before she put about, that the steward went down to call the cabin passengers upon deck, and they were on their way up when the sea passed over the vessel; a second sea succeeded almost immediately, and scarcely had Mr. Lawe and Mr. Nicolay stepped on the quarter deck, when they were hurried overboard. Mr. Lawe was taken in the break of the sea, and dashed his head downward against the paddle-box, by which, it is supposed, his brains must have been beaten out. Mr. Nicolay was taken up, whirled round several times, as if in a whirpool, and swept away. These two seas had the effect of bringing her head somewhat to windward again, when a third sea rapidly succeeded, and drove her on the rock. It was then between four and five o'clock; the first stroke she gave, the carpenter (James Mason) jumped upon it, as did also a deck passenger; but the landing-place was so narrow that there

was no room for both, and the latter fell into the water and was drowned. After striking the vessel receded; she soon struck again, and continued receding and striking for some time, during which some of the sailors, the first mate, and the captain landed; when the latter got on the rock, a rope was thrown to him and the mate that they might endeavour to keep the vessel to the rock. Most—we believe all—of the sailors, and some of the passengers, were saved in this way, only one landing at a time. The steward (Michael Sheehan, a native of Cork) scrambled along the vessel to look for Mrs. Lawe. He found her on the deck, near the funnel, calm and collected. He brought her to the quarter gallery (the part of the vessel that moment striking), and loosening the rope, he handed it to her, and directed her to it, and, when the vessel next struck, to leap into the sea, and they would drag her to the rock. She did so, and was drawn up part of the rock, but having let go the rope, and the wave returning immediately, she was carried away when it receded, and never was seen again. Sheehan leaped almost at the same moment as Mrs. Lawe, and was saved. The last persons that left the vessel were a sailor and a woman, the latter supposed to be the stewardess; she appeared to be senseless, and the sailor, who seemed to have brought her from the cabin, had her in his arms. He leaped from the vessel and reached the rock, the woman under one arm; but the footing was narrow, and the rock was shelving, he had room for little more than his toes, and was obliged to endeavour to hold on with the fingers of one hand; but the weight of the woman inclining him backwards they were carried off in the same manner as Mrs. Lawe. Had not the sailor endeavoured to save the stewardess, the poor fellow might unquestionably have saved himself. The manner in which some of the lives were lost was peculiarly affecting. Dr. Spolasco had his little son in his arms, soothing and supporting him, and when the vessel struck he flung him with all his strength towards the rock. The child reached the rock, though the violence of the effort nearly sent the father overboard. When the latter gained the rock, he again took him in his arms, and by clasping him closely, endeavoured to keep him warm. "Kiss me, papa," said the little fellow, "we shall soon meet no more." The child was right; in a few minutes he got on his feet, ventured a short distance from his father's side, and benumbed,

we suppose, by cold, dropped from the rock and was drowned. As soon as Sheehan had loosened the rope, to give it to Mrs. Lawe, the vessel, having nothing to confine her, swung round, and the next sea that struck her drove her against the rock; her deck opened, she divided into two—fore and aft; and all that had been unable to quit her, in order to reach the rock, perished in an hour after. With the exception of the engine and the paddle-wheel, not a vestige of the vessel or her machinery were visible.

There were about 25 persons on the rock; the sailors had contrived to clamber to the sheltered side, but the situation of the passengers was pitiable in the extreme. Mr. Foster, who had on but a shirt and waistcoat, was seated astride on a projection of the rock, his face to the sea; under him was Mr. Collis, his back to the sea, his toes resting on a narrow ledge, and his fingers clinging in a crevice. Alongside the latter was the engineer (McArthur), next to him, side by side, were Dr. Spolasco, Mary Leary, and Sheehan, the latter lying on his face and hands, every sea washing over him; over them were the steward's brother (Ward), the captain, the mate, a boy in the care of pigs, for Messrs. Adams, and the cabin boy. The persons on the side next the land, observing some country people, about 18 or 20, on the rock, they shouted to them, hoping to attract their attention, but there was no answer; the probability is, that the shout never reached the land; but they saw the people subsequently descend and carry off some of the pigs that had been washed ashore. Night then came on: about 11 o'clock the wind rose and blew terrifically, but amid the raging of the storm a startling shriek was heard—poor young Foster had lost his hold, and tumbling headlong, immediately passed his friend, Mr. Collis; his neck was heard to crack on the hard rock, and he fell into the sea. He was not the first, however, that fell; the engineer, McArthur, some time previous, had called to his companions that he was unable to hold on any longer; he put his hands into his pockets in order to warm them, but just as he did so a sea washed him from his slender footing; as he passed he made a grasp at Dr. Spolasco: had he caught him both must have perished, but he only touched him; he contrived to catch part of the rock, however, about 20 feet lower down, by which he held on for some time, every sea washing over him, and eventually succeeded in regaining the position he had lost. Soon

after Mr. Foster fell, Ward, who had been dropping asleep, was heard to fall; then followed Messrs. Adams's boy, and then, towards morning, the cabin boy. When morning broke they with some difficulty clambered upon the rock, and got to the sheltered side; the great difficulty now was, to get a rope to reach them. On Sunday, ducks with ropes fastened to them were sent out; only one reached, and that they were not able to catch. Wire was attached to bullets, and rope to the wire, and sundry shots were fired, but without the rope reaching the unfortunate people. The gentry round were all present giving their assistance. Captain Knolles, Esq., of Oatlands, and his son; Richard Knolles, Esq.; George Daunt, Esq., and Arthur Daunt, Esq., of Newborough; Dr. McDermott; Charles Newenham, Esq.; Mr. Hull, of the Coast Guard, at Robert's Cove, and his brother; and though last, not least, Lady Roberts, of Britfieldstown; nothing could exceed her ladyship's attention to the sufferers when rescued. Sir Thomas was not at home.

On Sunday, when all efforts to reach them with a rope, by the above-mentioned means, were found vain, Mr. Hull, brother of the officer of the Coast Guard, suggested the fastening a long rope to one part of the promontory and carrying it along the beach to the other side, until a rope dependant from the middle of it was brought within the reach of those on the rock: this was effected; but the dependant rope was so weak, and it was so late (then after four o'clock), and just dark, that it was necessary to give over further exertions for that evening, and direful as was the alternative, leave the sufferers exposed to the fury of another night. In the course of the day, worn out by hunger and fatigue, McArthur, the engineer, and Jephson, the black cook, died. Here the survivors had to remain until Monday; their sufferings it would be impossible to describe; and their agony, when they saw the attempt to rescue them on Sunday abandoned—when darkness settled down upon the deep, and they could no longer distinguish the figures of the persons on the cliff above them—it would not be easy to imagine. Their sole sustenance during the two tedious days and nights that they were doomed to this dismal destiny, was a little salt water, and the few scraps of sea-weed that they could gather from one of the blackest and most barren rocks on the coast. The night, however, was not so tempestuous as the preceding, and at

daylight many were on the spot to give their assistance, Lady Roberts among the first.

On Monday Captain MANBY's life-preserving apparatus was brought from Kinsale, but the same difficulty was experienced in reaching the rock with the rope. Shots were again fired from guns and small cannon brought for the purpose, but without success; and Mr. Hull's plan was again resorted to; this succeeded. Captain MANBY's apparatus was affixed to the centre rope, and about eleven o'clock two loaves of bread, and a little wine and spirit were lowered to them—the first they had partaken of since Friday. After refreshing themselves they were hauled up in the cradle belonging to the apparatus, one by one—the woman first.

The following were drawn up:—Mr. Collis, Dr. Spolasco, and a woman, passengers; the captain; George Rowles, mate; William Hancock, John Price, John Champion, Charles Goodlin, J. Atfell, and William Peterson, seamen; G. Porter, coal-trimmer, and J. Mason, carpenter, who died soon after. When landed they all seemed in a collapsed state; the respiration was perfect, but all their feet were swollen, and the circulation was scarcely perceptible. They were all put into neighbouring cottages, and attended to under the immediate superintendance of Lady Roberts, who provided them with covering, gruel, and other nourishing drink; Dr. McDermott, and, indeed, all in the vicinity were most attentive. Mr. Collis, who appeared to have suffered less than would have been supposed, was taken to Britfieldstown (Sir Thomas Roberts's), and the captain to the Waterguard Station; the rest were comfortably provided for; and seldom were individuals more in want of it, they having been the whole of Saturday night (and a most dreadful night it was), all Sunday and Sunday night, exposed to both winds and waves, besides which they were wet before they left the vessel. The woman who lay on the rock, and was rescued, had on nothing but her night-dress and a small handkerchief; the stewardess was washed ashore with only buskins on her. Mrs. Morris, whose husband (a tanner) is among the dead, had two stays on, and 180 sovereigns stitched between the linings; these were rifled when she floated ashore, as well as some rings that were on her fingers. Among those who distinguished themselves on this trying occasion were, Lieutenant Irwin, R.N., Inspecting Commander

of the Coast Guard at Kinsale, and Charlesson, Chief Officer of Oyster Haven. It was considered, after a lengthened investigation, that the captain did his utmost to save the vessel and passengers, but the great number of pigs on board accelerated her destruction.

The rock upon which the poor sufferers alighted rises into a peak about thirty feet high from the sand at low water; it is the last, and next to the shore, of a chain of black craggy rocks, separated from each other by deep chasms, into which the sea lashes its terrific volumes. About ten feet from the summit of this rock is a portion of it quite a plane, and perhaps a dozen yards in length and breadth; the breast, and other parts of it, are jagged and sharp, which must have helped the sufferers to ascend in one point of view, though by it they were exposed to a horrid death, should they have made a false step on the slippery spot they were clinging to. On the level portion of the rock, those who reached it had to arrange themselves with as much fortitude and resignation as they could muster; had not the rock been so formed, but all over a pointed crag, it is questionable whether a single one would have survived to give the reader a fair idea of the nearness of this rock to the beach; we need only say that you must bend over the cliff to see it; yet, such was the violence of the storm that raged all along, not a single boat could reach it, or attempt to put out, even on Sunday. The seaman, though able-bodied, who attempted to swim in it, sank and perished; the great height of the cliff, being about 250 or 300 feet high from the beach, is calculated to deceive the eye, yet one would imagine that the proximity of the rock, on which the sufferers were perched, would have rendered assistance a matter of easier accomplishment than it proved to be; the precise distance we cannot state, but from the fact that no rope could be swung from the beach to it, nor a ball reach from a two-pounder, it could not have been so inconsiderable as would appear to the eye at a first glance. The fact of its not being practicable to render the poor sufferers on the rock any aid, although within so short a distance, may be ascribed in a great measure to the defective state of stores supplied to the life apparatus, is confirmed by the following official letter, which painfully explains the cause of their protacted sufferings; as lives have been promptly saved in gales as severe as ever raged, accompanied with hail, rain, and snow, and at the distance of 240 yards from the base of a cliff:—

EXTRACT FROM A LETTER OF J. IRWIN, Lt., R.N., TO THE INSPECTOR-GENERAL OF THE COAST GUARD, DUBLIN, ON AN INQUIRY INTO THE CIRCUMSTANCES OF THE UNFORTUNATE WRECK.

"Although sixteen years in the Coast Guard, I never saw Manby's apparatus until the morning in question, except in an inefficient state, in the Watch House at Old Head of Kinsale, on taking charge of the district in October last. Much of the materials having been condemned three years since, it may, therefore, be presumed it was imperfectly managed on this occasion; but as it was loaded agreeable to the instruction, with the largest charge of powder, the line going clear, and shot in capital direction. I can only attribute its failure to what I before stated. Had there not been so much wind, with good powder it ought to have gone twice the distance; and must be admirably adapted for a strand.

"J. IRWIN, Lt., R.N."

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